

**SPECIAL MEETING
OF THE BOARD OF DIRECTORS
OF THE LIVERMORE-AMADOR VALLEY WATER MANAGEMENT AGENCY**

Wednesday, February 20, 2019 6:00 p.m.

**NOTE CHANGED LOCATION:
Pleasanton City Council Chambers
200 Old Bernal Avenue
Pleasanton, California**

1. Call to Order

2. Pledge of Allegiance

3. Roll Call

4. Order of Agenda/Acknowledgement of Posting

(The agenda may be re-ordered by motion of the Board. The agenda has been posted virtually on the Agency's website and physically in the display case outside the DSRSD Building, Pleasanton City Hall and Livermore City Hall at least 72 hours prior to a regular meeting and 24 hours prior to a special meeting.)

5. Public Comment

(Persons wishing to address the Board on any Consent item or on Agency business not listed on the Agenda may do so at this time. No action may be taken on items not listed on the agenda. Any item raised by a member of the public which is not on the agenda and may require Board action shall be automatically referred to staff for investigation and disposition which may include placing on a future agenda. Persons wishing to address the Board on any agenda item may do so once the item is called. After being recognized by the Board Chair, please approach the podium and begin by providing your name and address for the record (optional). There is a time limitation of three minutes per person. Non-English speakers using a translator will have a time limit of six minutes. Written materials must be submitted by 3:00 P.M. on the meeting day.)

6. Consent Calendar

(All items on the Consent Calendar will be considered together by one or more action(s) of the Board unless a Board member pulls an item.)

**Action
Pages 3 – 6**

6.a. Board Meeting Minutes of November 21, 2018

(The Board will consider approving the minutes from the November 21, 2018 Board meeting.)

**Resolution
Pages 7 – 8**

7. Approval of a Resolution Changing the Official Regular Meeting Location

(The Board will consider approving a Resolution changing the official regular meeting location from Dublin San Ramon Services District to City of Pleasanton due to a renovation project.)

**Information
Pages 9 – 19**

8. Financial Reporting for the Fiscal Year Ending June 30, 2019

(The Board will review the Financial Reports for the Fiscal Year June 30, 2019.)

- Information** **9. LAVWMA Quarterly Report of Operations, 2nd Quarter, FY2018-2019**
Pages 20 – 42 (The Board will review the Quarterly Report of Operations, 2nd Quarter, FY2018-2019.)
- Resolution** **10. Approval of Dublin San Ramon Services District Request to Divert
Wastewater from the Central Contra Costa Sanitary District Collection
System to Supplement the Dublin San Ramon Services District and East Bay
Municipal Utilities District Recycled Water Agency (DERWA) Supply**
Pages 43 – 59 (The Board will consider approving a request from Dublin San Ramon Services District to divert
wastewater from the Central Contra Costa Sanitary District collection system to supplement the
DERWA recycled water supply under specified conditions.)
- Information** **11. Update and Response to Various Legal and Legislative Issues**
Pages 60 – 62 (The Board will be updated on LAVWMA's response to various legal and legislative issues.)
- Information** **12. General Manager's Report**
Pages 63 – 122 (The Board will review the General Manager's Report regarding the operations and maintenance
of the Agency and its facilities.)
- Information** **13. Matters From/For Board Members**
 (Board members may make brief announcements or reports on his or her own activities, pose
questions for clarification, and/or request that items be placed on a future agenda. Except as
authorized by law, no other discussion or action may be taken.)
- 14. Next Regular Board Meeting, Wednesday, May 15, 2019, 6:00 p.m.**
- 15. Adjournment**

DISABILITY ACCOMMODATION: Livermore-Amador Valley Water Management Agency will provide special assistance for disabled citizens upon at least 72 hours advance notice to the General Manager's office (925-875-2202). If you need sign language assistance or written material printed in a larger font or taped, please notify the General Manager's office as soon as possible. All meeting rooms are accessible to the disabled.

AGENDA REPORTS AND DOCUMENTS: Copies of all staff reports and documents subject to disclosure that relate to each item of business referred to on the agenda are available for public inspection ordinarily by the Friday before each regularly scheduled Board meeting, and/or at the same time the documents are provided to all, or a majority of all, of the Board, at Dublin San Ramon Services District, located at 7035 Commerce Circle, Pleasanton, CA, at the reception desk, and may also be made available online at http://www.lavwma.com/agency_meetings.php. A fee may be charged for copies.

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LAVWMA
Livermore-Amador Valley Water Management Agency
Draft
Minutes
Special Meeting of Board of Directors
Wednesday, November 21, 2018
Pleasanton City Council Chambers
200 Old Bernal Avenue, Pleasanton, California
6:00 p.m.

1. Call to Order

Chair Jerry Pentin called the meeting to order at 6:00 p.m.

2. Pledge of Allegiance

3. Roll Call

Board Members Present: Chair Pentin, Directors Brown, Duarte, Marchand, and Woerner

Board Members Absent: Misheloff

Staff Present: General Counsel Clare Gibson, General Manager Chuck Weir, DSRSD Financial Services Supervisor Herman Chen, Administrative Assistant and Recording Secretary, Sue Montague

Staff Absent: None

Others Present: David Albee, Maze & Associates; Judy Zavadil, DSRSD; Dan Sequira, City of Pleasanton

4. Order of Agenda

There were no changes to the order of the agenda.

5. Comments from the Public

There were no comments from the public.

6. Consent Calendar

- a. Minutes of August 15, 2018 LAVWMA Board Meeting

Director Marchand motioned, seconded by Director Woerner to approve Consent Calendar Item No. 6.a.

The Motion passed unanimously (5-0).

7. Financial Reporting for the Fiscal Years Ending June 30, 2018 and June 30, 2019

Mr. Chen was in attendance on behalf of Treasurer Atwood. He noted that the final Financial Reports for the period ending June 30, 2018 are included in Agenda Item No. 8, Audit Report for Fiscal Year Ending June 30, 2018. He also noted that due to the flood at DSRSD's office and the

time it took to relocate their offices, the Financial Report for the period ending June 30, 2019 is not yet available. A report for the period July 1, to December 31, 2018 will be presented at the February 20, 2019 Board meeting. This was an information item requiring no action by the Board.

8. Acceptance of Audit Report for Fiscal Year Ending June 30, 2018

David Albee from the audit firm Maze & Associates provided an overview of the Audit Report. He noted that there were no issues or weaknesses identified during the course of their audit.

Director Brown motioned, seconded by Director Duarte to accept the Audit Report for Fiscal Year ending June 30, 2018.

The motion passed unanimously (5-0).

9. LAVWMA Quarterly Reports of Operations, 1st Quarter, FY2018-2019

The Board reviewed the Report. Mr. Weir reported that as of the end of October all three new pumps have been installed and are operating as designed. He referred the Board to the new graphs at the beginning of the report. Since two of the new pumps were running all through September, the pump efficiency has increased from just over 50% to almost 75% and the cost per million gallons has decreased from approximately \$450 to \$382. The Board was pleased to see that the new pumps are operating so well.

The Board asked about labor costs in July, which appear high and are likely due to three pay periods in the month. The Board also asked about the apparent high fecal coliform result in July as it was not consistent with the enterococcus or chlorine residual results. Mr. Weir reported that there are occasional anomalies in bacteriological tests, which is why compliance is based on median and geometric mean data.

10. Approval of City of Pleasanton Request for Retroactive Approval for Extension of Wastewater Service to Properties Located in Unincorporated Happy Valley and Remen Tract During the Period 1993 to 2014 and Preapproval of Up to Ten (10) Additional Extensions Each in Happy Valley and Remen Tract, Subject to LAFCO Approval and a Four-Year Sunset Limitation, Pursuant to LAVWMA Administrative Policy No. 2017-01 Regarding Unincorporated Area Service Extensions

Ms. Gibson and Mr. Weir discussed the history and intent of the proposed action by the Board and how it was linked to the requirements of the Joint Powers Agreement and the Administrative Policy regarding unincorporated area service extensions. Chair Pentin asked Ms. Gibson if the Pleasanton representatives can vote on this item and she responded that they can. Director Marchand stated that he serves on the LAFCO Board where this issue first arose. He asked what assurances are there that Pleasanton won't keep doing this? Dan Sequira, City of Pleasanton, addressed the Board. He stated that the City is using a permit processing software program that will ensure proper tracking of properties like this. He assured the Board that current City staff would make sure properties are properly tracked. Mr. Weir and Ms. Gibson offered to send a letter to the City with the Resolution stating that no future approvals would be granted unless they were in compliance with applicable policy.

Director Duarte motioned, seconded by Director Woerner to approve Resolution No. 18-03 Approval of City of Pleasanton Request for Retroactive Approval for Extension of

Wastewater Service to Properties Located in Unincorporated Happy Valley and Remen Tract During the Period 1993 to 2014 and Preapproval of Up to Ten (10) Additional Extensions Each in Happy Valley and Remen Tract, Subject to LAFCO Approval and a Four-Year Sunset Limitation, Pursuant to LAVWMA Administrative Policy No. 2017-01 Regarding Unincorporated Area Service Extensions.

The motion passed unanimously (5-0).

11. Approval of Modification to DSRSD/LAVWMA Potential Storage Needs Due to a 10-Year Wet Weather Event

Judy Zavadil, DSRSD Engineering Services Manager, provided an overview of the history of wet weather trigger events in the NPDES Permit as well as changes to water usage in the last ten years. The prior permit references a 20-year event and the current permit references a 10-year event. As noted in the report from Carollo Engineers, planned additions to storage are no longer required. Not needing additional future storage will result in changes to their connection fee structure. The Board asked about the possibility of larger trigger events in the future and how that would affect planning. Ms. Zavadil assured the Board that future wet weather events will be part of DSRSD's ongoing planning process.

Director Marchand motioned, seconded by Director Woerner to Approve Modification to DSRSD/LAVWMA Potential Storage Needs Due to a 10-Year Wet Weather Event.

The motion passed unanimously (5-0).

12. Proclamation for Dwight L. "Pat" Howard

The Board reviewed the Proclamation for Pat Howard acknowledging his many years of service to DSRSD, DERWA, and LAVWMA.

Director Marchand motioned, seconded by Director Brown to Approve the Proclamation for Dwight L. "Pat" Howard.

The motion passed unanimously (5-0).

13. Update and Response to Various Legal and Legislative Issues

The General Manager and General Counsel updated the Board on legislation of interest. Several items will ultimately impact water and wastewater agencies. Ms. Gibson noted that AB2249 sets new levels for the Uniform Public Construction Cost Accounting Act and that LAVWMA's policy on this issue was intentionally written to include all future changes to the Act. This was an information item only, requiring no action by the Board.

14. General Manager's Report

Mr. Weir referred to the list of activities in his report. He provided a brief summary of the following items: pump purchase, asset management, and LAVWMA's records management project, amendments to the Recycled Water Policy, status of the Nutrients Watershed Permit, and various EBDA issues. As discussed in Agenda Item No. 9, he discussed the new pumps and their efficiency. He also noted that after Thanksgiving he would begin discussing final payment issues with MuniQuip, based on direction provided by the Board at the August 15, 2018 meeting. He noted that no payments have yet been made to MuniQuip. Director Woerner requested that once

the project is fully closed that “lessons learned” be documented to help prevent future reoccurrences. Mr. Weir and Ms. Gibson stated that many issues can be avoided with tighter contract requirements as well as performance milestones. They also stated that they would document all applicable items.

15. Matters From/For Board Members

None.

16. Next Regular Board Meeting, Wednesday, February 20, 2019, 6:00 p.m.

Mr. Weir noted that the location has not yet been determined and will depend on DSRSD’s repairs to its office building.

17. Adjournment

There being no further action, Chair Pentin adjourned the meeting at 6:56 p.m.

Minutes Approved by the Board _____.

Charles V. Weir
General Manager

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Agenda Explanation
Livermore-Amador Valley
Water Management Agency
Board of Directors
February 20, 2019

**ITEM NO. 7 APPROVAL OF A RESOLUTION CHANGING THE OFFICIAL
REGULAR MEETING LOCATION**

Action Requested

Approve Resolution No. 19-01, Resolution Changing the Official Regular Meeting Location.

Summary

Per Resolution No. 17-03, LAVWMA holds its Board of Directors meetings at the Dublin San Ramon Services District (DSRSD) Boardroom located at 7051 Dublin Boulevard in Dublin on the third Wednesday in February, May, August, and November at 6 p.m. The DSRSD Office is currently unavailable to host Board meetings due to the discovery, on November 11, 2018, of a fire service line leaking and causing flooding, water damage, and an inoperable fire suppression system rendering the facility unsafe for holding meetings. This Resolution establishes a new regular Board meeting location, and reaffirms the same meeting dates and starting time of 6 p.m.

The City of Pleasanton has graciously offered its assistance by providing a location within LAVWMA's jurisdiction to hold its Board meetings while the DSRSD Office undergoes repairs. The new meeting location is the Pleasanton City Council Chambers, 200 Old Bernal Avenue, Pleasanton, CA. A resolution will be presented to the Board at a future meeting to reestablish the DSRSD Boardroom as LAVWMA's regular meeting location when repairs are completed, and staff and the Board are cleared to move back to the facility.

Recommendation

Approve Resolution No. 19-01, Resolution Changing the Official Regular Meeting Location.

Livermore-Amador Valley Water Management Agency

RESOLUTION NO. 19-01

A RESOLUTION OF THE LIVERMORE-AMADOR VALLEY WATER MANAGEMENT AGENCY CHANGING THE OFFICIAL REGULAR MEETING LOCATION

WHEREAS, the Livermore-Amador Valley Water Management Agency (“LAVWMA”) is a joint powers agency comprised of the cities of Livermore and Pleasanton and the Dublin San Ramon Services District;

WHEREAS, LAVWMA requires regular meetings to conduct its business;

WHEREAS, the Joint Exercise of Powers Agreement requires the Board establish the frequency, date, hour, and location of Regular Meetings;

WHEREAS, LAVWMA currently holds its regular meetings on the third Wednesday in February, May, August, and November at 6 p.m. at Dublin San Ramon Services District (“DSRSD”), 7051 Dublin Boulevard, Dublin, California 94568;

WHEREAS, LAVWMA desires to change the location of regular meetings of the Board of Directors due to the DSRSD offices being rendered unsafe after a fire service line leaked beneath the building causing flooding, water damage, and an inoperable fire suppression system;

NOW, THEREFORE, BE IT RESOLVED by the Livermore-Amador Valley Water Management Agency that Regular Board meetings shall be at 6:00 p.m. on the third Wednesday of February, May, August, and November of each calendar year and shall be held at the Pleasanton City Council Chambers, 200 Old Bernal Avenue, Pleasanton, California 94566.

BE IT FURTHER RESOLVED that this Resolution shall supersede all prior resolutions establishing Regular Board meeting dates and render null and void the provisions of any other prior resolutions which are inconsistent.

DULY AND REGULARLY ADOPTED by LAVWMA’s Board of Directors this 20th day of February 2019 by the following vote:

AYES:

NOES:

ABSENT:

Madelyne Misheloff, Chair

ATTEST: _____
Charles V. Weir, General Manager

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Agenda Explanation
Livermore-Amador Valley
Water Management Agency
Board of Directors
February 20, 2019

ITEM NO. 8 FINANCIAL REPORTING FOR THE FISCAL YEAR ENDING JUNE 30, 2019

Action Requested

None at this time. This is an information item only.

To: LAVWMA Board of Directors

From: Carol Atwood, LAVWMA Treasurer

Subject: Financial Reporting for FYE 2019

Summary

Attached are two financial statements for the period July 1, 2018 through December 31, 2018.

Attachments:

Schedule of Sub Fund Account Balance Sheets – Shows the assets and liabilities of LAVWMA in each of its funds

Schedule of Sub Fund Account Activity – Shows the income and expense transactions for LAVWMA in each fund. Most of LAVWMAs activity will be in the Operations & Maintenance fund.

O&M Fund Budget vs. Actual – Shows the status of the budget to actual expenses for the O&M Fund for the period July 1, 2018 through September 30, 2018 and for the period July 1, 2018 through December 31, 2018.

Investment Report – A report showing how LAVWMA's available cash is invested.

GM Approved Invoice Listing – All general LAVWMA invoices are approved by the LAVWMA General Manager and Treasurer prior to payment by DSRSD. Those invoices are summarized and are billed to LAVWMA on a monthly basis via the DSRSD bill to LAVWMA. This listing is supplemental information requested by the LAVWMA General Manager to show the vendor, description and amount of each invoice in more detail.

Recommendation

None at this time. This is an information item only.

LIVERMORE-AMADOR VALLEY WATER MANAGEMENT AGENCY
SCHEDULE OF SUB FUND ACCOUNT BALANCE SHEETS
July through September 2018

	Maintenance & Operation	2011 Debt Service	Repair and Replacement Reserve			Total
			Joint-use Replacement	Dual-use Replacement	Sole-use Replacement	
ASSETS						
Cash and equivalents	\$1,346,850	\$19,612	\$452,666	\$12,143	\$9,242	\$1,840,513
Investments	423,563	14,797	15,022,740	412,642	1,545,420	17,419,162
Investments (LAIF FMV Adj)	(1,872)	(1,221)	(25,948)	(741)	(2,689)	(32,471)
Service Charges receivable	1,292,789	1,720,570	60,200			3,073,559
Advances to members	28,000		317,178			345,178
Capital Assets, net of accumulated depreciation	3,636,365		105,462,260	68,040	4,107,556	113,274,221
Total assets	6,725,695	1,753,758	121,289,096	492,084	5,659,529	135,920,162
LIABILITIES						
Accounts payable	(323)		323			-
Interest payable	-	1,606,344				1,606,344
Due to members	151,230					151,230
Advances from members	1,292,789	1,720,570	60,200			3,073,559
Deferred revenue						-
Long-term debt						
Bond issuance premium, net of amortization		5,505,160				5,505,160
Due within one year						-
Due in more than one year	-	82,795,000				82,795,000
Total liabilities	1,443,696	91,627,074	60,523	-	-	93,131,294
NET ASSETS						
Invested in capital assets, net of related debt	3,636,365	(88,300,160)	105,462,260	68,040	4,107,556	24,974,061
Unrestricted net assets	1,699,772	(\$10,477,504)	20,521,426	431,937	2,048,867	14,224,498
Total net assets	\$5,336,137	(98,777,664)	125,983,686	499,977	6,156,423	39,198,559

LIVERMORE-AMADOR VALLEY WATER MANAGEMENT AGENCY
SCHEDULE OF SUB FUND ACCOUNT ACTIVITY
July through September 2018

			Repair and Replacement Reserve			
	Maintenance & Operation	2011 Debt Service	Joint-use Replacement	Dual-use Replacement	Sole-use Replacement	Total
OPERATING REVENUES						
Service charges - DSRSD	\$2,585,636	\$2,404,795	\$69,900			\$5,060,331
Service charges - City of Pleasanton	2,069,585	2,057,247	69,900			4,196,732
Service charges - City of Livermore	1,292,789	1,720,570	60,200			3,073,559
Service charges other	-					-
Total operating revenues	5,948,009	6,182,613	200,000			12,330,622
OPERATING EXPENSES						
Power	50,678					50,678
LAVWMA share of EBDA O&M - Fixed	127,940					127,940
LAVWMA share of EBDA O&M - Variable	40,705					40,705
Operations agreement	75,442		250			75,692
Professional services	2,164					2,164
Livermore sole use O&M	4,114					4,114
Insurance	-					-
Miscellaneous	583	35	1,762	48	177	2,606
Total operating expenses	301,627	35	2,012	48	177	303,899
Capital outlay			-			-
Total operating expenses and capital outlay	301,627	35	2,012	48	177	303,899
Operating income (loss)	5,646,382	6,182,577	197,988	(48)	(177)	12,026,722
NON-OPERATING REVENUES (EXPENSES)						
Amortization/Depreciation						-
EBDA Debt	(68,238)					(68,238)
Bond interest expense		(6,182,613)				(6,182,613)
Other Income		-				-
Interest income	350	1,744	1,919	53	194	4,260
Total non-operating revenues (expenses)	(67,888)	(6,180,868)	1,919	53	194	(6,246,591)
Changes in net assets	5,578,494	1,709	199,907	5	17	5,780,132
NET ASSETS						
Net assets, beginning of period	(242,357)	(98,779,373)	125,783,779	499,972	6,156,406	33,418,427
Prior Period adjustment						
Net assets, beginning of period restated	(242,357)	(98,779,373)	125,783,779	499,972	6,156,406	33,418,427
Net asset transfers						
Net assets, end of period	5,336,137	(\$98,777,664)	\$125,983,686	\$499,977	\$6,156,423	\$39,198,559

LIVERMORE-AMADOR VALLEY WATER MANAGEMENT AGENCY

O&M Fund - Budget vs Actual

July through September 2018

	FYE2018 Actual-to-Date	FYE2018 Budget-to-Date	Variance
<u>OPERATING REVENUES</u>			
Service charges - DSRSD	\$2,585,636	\$1,087,409	\$1,498,227
Service charges - City of Pleasanton	2,069,585	1,227,751	841,834
Service charges - City of Livermore	1,292,789	1,043,340	249,449
Service charges other	-	-	-
Total operating revenues	5,948,009	3,358,500	2,589,509
<u>OPERATING EXPENSES</u>			
Power	50,678	1,150,000	(1,099,322)
LAVWMA share of EBDA O&M - Fixed	127,940	490,000	(362,060)
LAVWMA share of EBDA O&M - Variable	40,705	157,500	(116,795)
Operations agreement	75,442	860,000	(784,558)
Professional services	2,164	229,000	(226,836)
Livermore sole use O&M	4,114	25,000	(20,886)
Insurance	-	25,000	(25,000)
Permits	-	10,000	(10,000)
Miscellaneous	583	-	583
Total operating expenses	301,627	2,946,500	(2,644,873)
Capital outlay	-	-	-
Total operating expenses and capital outlay	301,627	2,946,500	(2,644,873)
Operating income (loss)	5,646,382	412,000	5,234,382
<u>NON-OPERATING REVENUES (EXPENSES)</u>			
Amortization/Depreciation	-	-	-
EBDA Debt	(68,238)	(411,248)	343,010
Interest income	350	-	350
Total non-operating revenues (expenses)	(67,888)	(411,248)	343,360
Net Income	5,578,494	752	5,577,742

Livermore-Amador Valley Water Management Agency

General Manager Approved Invoice Listing

July - September 2018

Invoice Date	Vendor Name	Invoice #	Description	Check#	Date Paid	Total Amount
6/30/2018	MAZE & ASSOCIATES	29477	FY18 LAVWMA AUDIT SVCS - JUNE 2018	97660	8/9/2018	2,468.00
7/13/2018	BARRETT BUSINESS SERVICES INC.	3078311	S. MONTAGUE: W/E 7/08/18	97575	8/2/2018	702.00
7/18/2018	EAST BAY DISCHARGERS AUTHORITY	3111	O&M ASSESSMENT - JULY 1, 2018 QTR	97634	8/9/2018	168,644.93
7/20/2018	BARRETT BUSINESS SERVICES INC.	3079035	S. MONTAGUE: W/E 7/08/18	97631	8/9/2018	507.00
7/27/2018	BARRETT BUSINESS SERVICES INC.	3079870	S. MONTAGUE: W/E 7/22/18	97685	8/16/2018	682.50
7/31/2018	JARVIS, FAY & GIBSON, LLP	12230	GENERAL COUNSEL SVCS - JULY 2018	97800	8/23/2018	1,995.00
8/3/2018	BARRETT BUSINESS SERVICES INC.	3080853	S. MONTAGUE: W/E 7/29/18	97755	8/23/2018	750.75
8/3/2018	WEIR TECHNICAL SERVICES	LAVWMA_07-18	MANAGEMENT SERVICES - JULY 2018	97767	8/23/2018	6,058.36
8/10/2018	BARRETT BUSINESS SERVICES INC.	3081827	S. MONTAGUE: W/E 8/05/18	97837	8/30/2018	585.00
8/15/2018	MARCHAND, JOHN	081518 meeting	REGULAR BOARD MTG ATTENDANCE - 8/15/18	98007	9/13/2018	50.00
8/15/2018	OLSON, ARNE	081518 meeting	REGULAR BOARD MTG ATTENDANCE - 8/15/18	98017	9/13/2018	50.00
8/15/2018	PENTIN, JERRY	081518 meeting	REGULAR BOARD MTG ATTENDANCE - 8/15/18	98023	9/13/2018	50.00
8/16/2018	DOWNEY BRAND LLP	527335	LAVWMA: ENVIRONMENTAL LAW COMPLIANCE THRU 07/31/2018	97870	8/30/2018	231.00
8/17/2018	BARRETT BUSINESS SERVICES INC.	3082569	S. MONTAGUE: W/E 8/12/18	97837	8/30/2018	760.50
8/24/2018	BARRETT BUSINESS SERVICES INC.	3083537	S. MONTAGUE: W/E 8/19/18	98063	9/13/2018	848.25
8/31/2018	JARVIS, FAY & GIBSON, LLP	12326	GENERAL COUNSEL SVCS - AUGUST 2018	98133	9/20/2018	3,282.50
8/31/2018	BARRETT BUSINESS SERVICES INC.	3084325	S. MONTAGUE: W/E 8/26/18	98078	9/20/2018	682.50
9/4/2018	WEIR TECHNICAL SERVICES	LAVWMA_08-18	MANAGEMENT SERVICES - AUGUST 2018	98275	9/27/2018	11,813.32
9/7/2018	BARRETT BUSINESS SERVICES INC.	3085305	S. MONTAGUE: W/E 9/02/18	98256	9/27/2018	682.50
9/14/2018	BARRETT BUSINESS SERVICES INC.	3086302	S. MONTAGUE: W/E 9/09/18	98256	9/27/2018	663.00
9/14/2018	DOWNEY BRAND LLP	528373	LAVWMA: ENVIRONMENTAL LAW COMPLIANCE THRU 08/31/2018	98195	9/27/2018	115.50
9/17/2018	MAZE & ASSOCIATES	29750	LAVWMA AUDIT SVCS - JUNE 2018	98309	10/3/2018	4,936.00
9/21/2018	BARRETT BUSINESS SERVICES INC.	3086819	S. MONTAGUE: W/E 9/16/18	98278	10/3/2018	624.00
9/28/2018	BARRETT BUSINESS SERVICES INC.	3087740	S. MONTAGUE: W/E 9/23/18	98337	10/18/2018	565.50
						<u>207,748.11</u>

LIVERMORE-AMADOR VALLEY WATER MANAGEMENT AGENCY
SCHEDULE OF SUB FUND ACCOUNT BALANCE SHEETS
July through December 2018

	Maintenance & Operation	2011 Debt Service	Repair and Replacement Reserve			Total
			Joint-use Replacement	Dual-use Replacement	Sole-use Replacement	
ASSETS						
Cash and equivalents	\$980,007	\$19,612	\$451,992	\$12,138	\$9,225	\$1,472,973
Investments	432,263	14,965	15,098,787	414,729	1,553,060	17,513,804
Investments (LAIF FMV Adj)	(1,872)	(1,221)	(25,948)	(741)	(2,689)	(32,471)
Service Charges receivable	1,292,789	1,720,570	60,200			3,073,559
Advances to members	28,000		317,178			345,178
Capital Assets, net of accumulated depreciation	3,636,365		105,462,260	68,040	4,107,556	113,274,221
Total assets	6,367,552	1,753,925	121,364,469	494,167	5,667,152	135,647,264
LIABILITIES						
Accounts payable	(323)		323			-
Interest payable	-	1,606,344				1,606,344
Due to members	151,230					151,230
Advances from members	1,292,789	1,720,570	60,200			3,073,559
Deferred revenue						-
Long-term debt						
Bond issuance premium, net of amortization		5,505,160				5,505,160
Due within one year						-
Due in more than one year	-	82,795,000				82,795,000
Total liabilities	1,443,696	91,627,074	60,523	-	-	93,131,294
NET ASSETS						
Invested in capital assets, net of related debt	3,636,365	(88,300,160)	105,462,260	68,040	4,107,556	24,974,061
Unrestricted net assets	1,341,629	(\$10,477,336)	20,596,799	434,019	2,056,489	13,951,600
Total net assets	\$4,977,994	(98,777,497)	126,059,059	502,059	6,164,045	38,925,660

LIVERMORE-AMADOR VALLEY WATER MANAGEMENT AGENCY
SCHEDULE OF SUB FUND ACCOUNT ACTIVITY
July through December 2018

			Repair and Replacement Reserve			
	Maintenance & Operation	2011 Debt Service	Joint-use Replacement	Dual-use Replacement	Sole-use Replacement	Total
OPERATING REVENUES						
Service charges - DSRSD	\$2,585,636	\$2,404,795	\$69,900			\$5,060,331
Service charges - City of Pleasanton	2,069,585	2,057,247	69,900			4,196,732
Service charges - City of Livermore	1,292,789	1,720,570	60,200			3,073,559
Service charges other	-					-
Total operating revenues	5,948,009	6,182,613	200,000			12,330,622
OPERATING EXPENSES						
Power	218,948					218,948
LAVWMA share of EBDA O&M - Fixed	127,940					127,940
LAVWMA share of EBDA O&M - Variable	40,705					40,705
Operations agreement	223,494		750			224,244
Professional services	43,503					43,503
Livermore sole use O&M	13,027					13,027
Insurance	-					-
Miscellaneous	923	37	2,595	71	261	3,887
Total operating expenses	668,540	37	3,345	71	261	672,255
Capital outlay			-			-
Total operating expenses and capital outlay	668,540	37	3,345	71	261	672,255
Operating income (loss)	5,279,469	6,182,575	196,655	(71)	(261)	11,658,367
NON-OPERATING REVENUES (EXPENSES)						
Amortization/Depreciation						-
EBDA Debt	(68,238)					(68,238)
Bond interest expense		(6,182,613)				(6,182,613)
Other Income		-				-
Interest income	9,121	1,913	78,625	2,159	7,900	99,717
Total non-operating revenues (expenses)	(59,117)	(6,180,699)	78,625	2,159	7,900	(6,151,134)
Changes in net assets	5,220,351	1,876	275,280	2,087	7,639	5,507,233
NET ASSETS						
Net assets, beginning of period	(242,357)	(98,779,373)	125,783,779	499,972	6,156,406	33,418,427
Prior Period adjustment						
Net assets, beginning of period restated	(242,357)	(98,779,373)	125,783,779	499,972	6,156,406	33,418,427
Net asset transfers						
Net assets, end of period	4,977,994	(\$98,777,497)	\$126,059,059	\$502,059	\$6,164,045	\$38,925,660


LIVERMORE-AMADOR VALLEY WATER MANAGEMENT AGENCY

O&M Fund - Budget vs Actual

July through December 2018

	FYE2018 Actual-to-Date	FYE2018 Budget-to-Date	Variance
<u>OPERATING REVENUES</u>			
Service charges - DSRSD	\$2,585,636	\$1,087,409	\$1,498,227
Service charges - City of Pleasanton	2,069,585	1,227,751	841,834
Service charges - City of Livermore	1,292,789	1,043,340	249,449
Service charges other	-	-	-
Total operating revenues	5,948,009	3,358,500	2,589,509
<u>OPERATING EXPENSES</u>			
Power	218,948	1,150,000	(931,052)
LAVWMA share of EBDA O&M - Fixed	127,940	490,000	(362,060)
LAVWMA share of EBDA O&M - Variable	40,705	157,500	(116,795)
Operations agreement	223,494	860,000	(636,506)
Professional services	43,503	229,000	(185,497)
Livermore sole use O&M	13,027	25,000	(11,973)
Insurance	-	25,000	(25,000)
Permits	-	10,000	(10,000)
Miscellaneous	923	-	923
Total operating expenses	668,540	2,946,500	(2,277,960)
Capital outlay	-	-	-
Total operating expenses and capital outlay	668,540	2,946,500	(2,277,960)
Operating income (loss)	5,279,469	412,000	4,867,469
<u>NON-OPERATING REVENUES (EXPENSES)</u>			
Amortization/Depreciation	-	-	-
EBDA Debt	(68,238)	(411,248)	343,010
Interest income	9,121	-	9,121
Total non-operating revenues (expenses)	(59,117)	(411,248)	352,131
Net Income	5,220,351	752	5,219,599

Average Daily Balance	\$ 17,512,215
Effective Rate of Return	2.40%


2/14/19
 EDR Carol Atwood, Treasurer Date

Livermore-Amador Valley Water Management Agency

General Manager Approved Invoice Listing

October - December 2018

Invoice Date	Vendor Name	Invoice #	Description	Check#	Date Paid	Total Amount
9/30/2018	JARVIS, FAY & GIBSON, LLP	12420	GENERAL COUNSEL SVCS - SEPTEMBER 2018	98480	10/25/2018	1,202.50
10/1/2018	WEIR TECHNICAL SERVICES	LAVWMA_ 09-18	MANAGEMENT SERVICES - SEPTEMBER 2018	98440	10/25/2018	7,392.25
10/5/2018	BARRETT BUSINESS SERVICES INC.	3089342	S. MONTAGUE: W/E 9/30/18	98420	10/25/2018	741.00
10/10/2018	DOWNEY BRAND LLP	529113	LAVWMA: ENVIRONMENTAL LAW COMPLIANCE THRU 09/30/2018	98571	10/31/2018	1,001.00
10/12/2018	BARRETT BUSINESS SERVICES INC.	3089796	S. MONTAGUE: W/E 10/07/18	98539	10/31/2018	156.00
10/12/2018	EAST BAY DISCHARGERS AUTHORITY	CM 3125	O&M ASSESSMENT - FINAL FY 2017/18	98542	10/31/2018	(14,055.48)
10/22/2018	EAST BAY DISCHARGERS AUTHORITY	3131	O&M ASSESSMENT - OCTOBER 1, 2018 QTR	98542	10/31/2018	168,644.93
10/26/2018	BARRETT BUSINESS SERVICES INC.	3091298	S. MONTAGUE: W/E 10/21/18	98702	11/15/2018	195.00
10/31/2018	JARVIS, FAY & GIBSON, LLP	12513	GENERAL COUNSEL SVCS - OCTOBER 2018	98830	11/21/2018	4,225.00
11/2/2018	BARRETT BUSINESS SERVICES INC.	3092338	S. MONTAGUE: W/E 10/28/18	98702	11/15/2018	741.00
11/9/2018	BARRETT BUSINESS SERVICES INC.	3092963	S. MONTAGUE: W/E 11/04/18	98898	11/29/2018	663.00
11/14/2018	DOWNEY BRAND LLP	530295	LAVWMA: ENVIRONMENTAL LAW COMPLIANCE THRU 10/31/2018	98947	12/6/2018	115.50
11/16/2018	BARRETT BUSINESS SERVICES INC.	3094092	S. MONTAGUE: W/E 11/11/18	98917	12/6/2018	780.00
11/23/2018	BARRETT BUSINESS SERVICES INC.	3094883	S. MONTAGUE: W/E 11/18/18	99034	12/13/2018	1,326.00
11/27/2018	SWRCB - ATTN: ACCT OFFICE	WD- 0143094	FY 19 PERMIT (FAC ID 2 019129001)	99124	12/20/2018	20,000.00
11/30/2018	MAZE & ASSOCIATES	30341	LAVWMA AUDIT SVCS - JUNE 2018 FINAL	99093	12/20/2018	822.00
11/30/2018	BARRETT BUSINESS SERVICES INC.	3095859	S. MONTAGUE: W/E 11/25/18	99034	12/13/2018	994.50
11/30/2018	WEIR TECHNICAL SERVICES	LAVWMA_ 10-18	MANAGEMENT SERVICES - OCTOBER 2018	99173	12/20/2018	6,265.55
12/7/2018	BARRETT BUSINESS SERVICES INC.	3096611	S. MONTAGUE: W/E 12/02/18	99146	12/20/2018	312.00
						<u>201,521.75</u>

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Agenda Explanation
Livermore-Amador Valley
Water Management Agency
Board of Directors
February 20, 2019

ITEM NO. 9 LAVWMA QUARTERLY REPORTS OF OPERATIONS, 2ND QUARTER, FY 2018-2019

Action Requested

None at this time.

Summary

LAVWMA's Quarterly Report of Operations for the 2nd Quarter, FY 2018-2019 is attached for the Board's review. These quarterly reports are prepared by DSRSD staff and summarize all LAVWMA operations and maintenance activity for each quarter. Jeff Carson, DSRSD Operations Manager, will be available to answer any questions from the Board. Please note that the report has been modified to include a Table of Contents as well as a Quarter at a Glance. The Quarter at a Glance includes new graphs that show Flows and pumping Efficiency, Energy Consumption, Budget Variance, and Work Order History.

The Board should pay particular notice to the pumping efficiency, which has improved from 50% to approximately 70%. Last quarter the efficiency was nearly 75%. The reduction in efficiency is due to the increased flows during the winter that require additional pumps. The three new ones are used as much as possible. Also note that the cost per million gallons has dropped from approximately \$450/MG, prior to the new pumps, to \$340/MG. The cost is even lower for December. Lastly, expenses to date are running well below budget, primarily due to reduced energy costs for pumping.

Special thanks go to Gemma Lathi from DSRSD for her efforts in revising and preparing the quarterly reports.

Recommendation

None at this time. This is an information item only.

LAVWMA

QUARTERLY REPORT OF OPERATIONS

2nd Quarter, FY 2018-2019



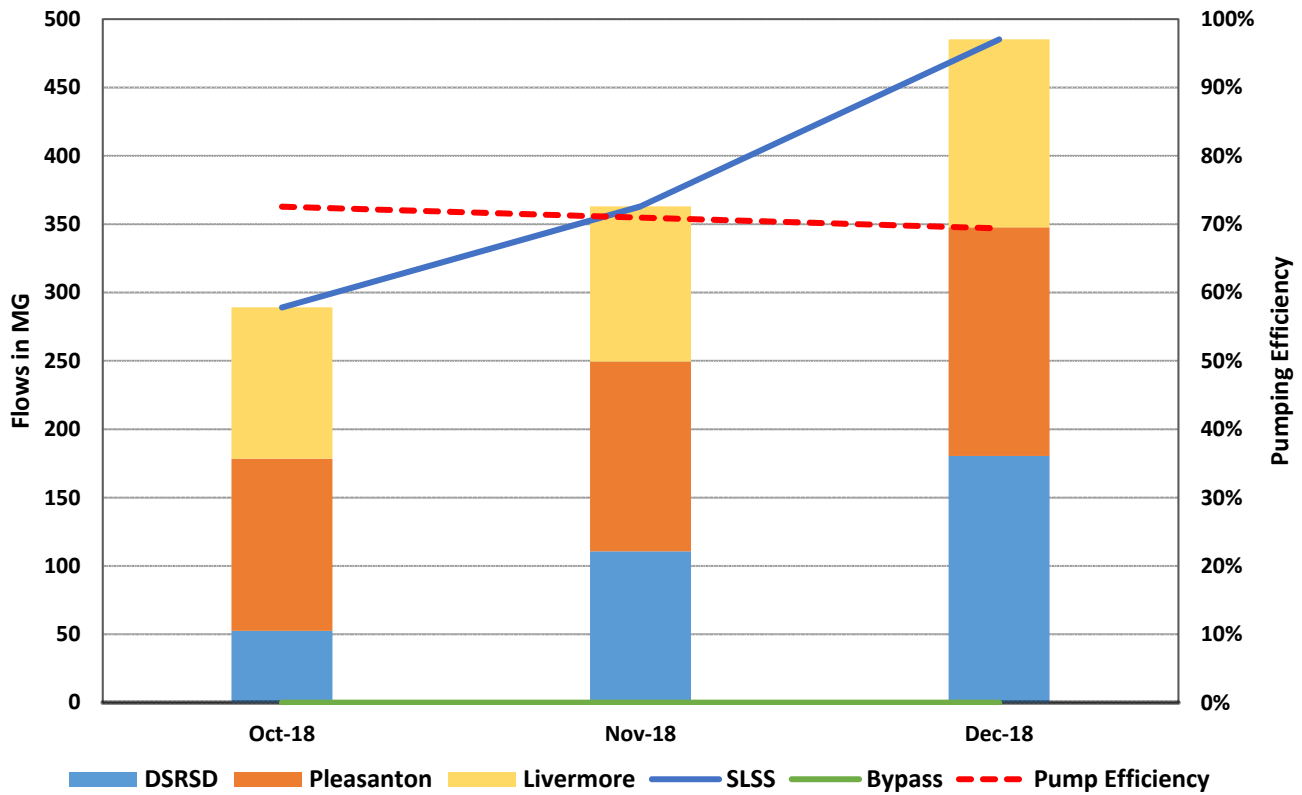
**Dublin San Ramon
Services District**

Water, wastewater, recycled water

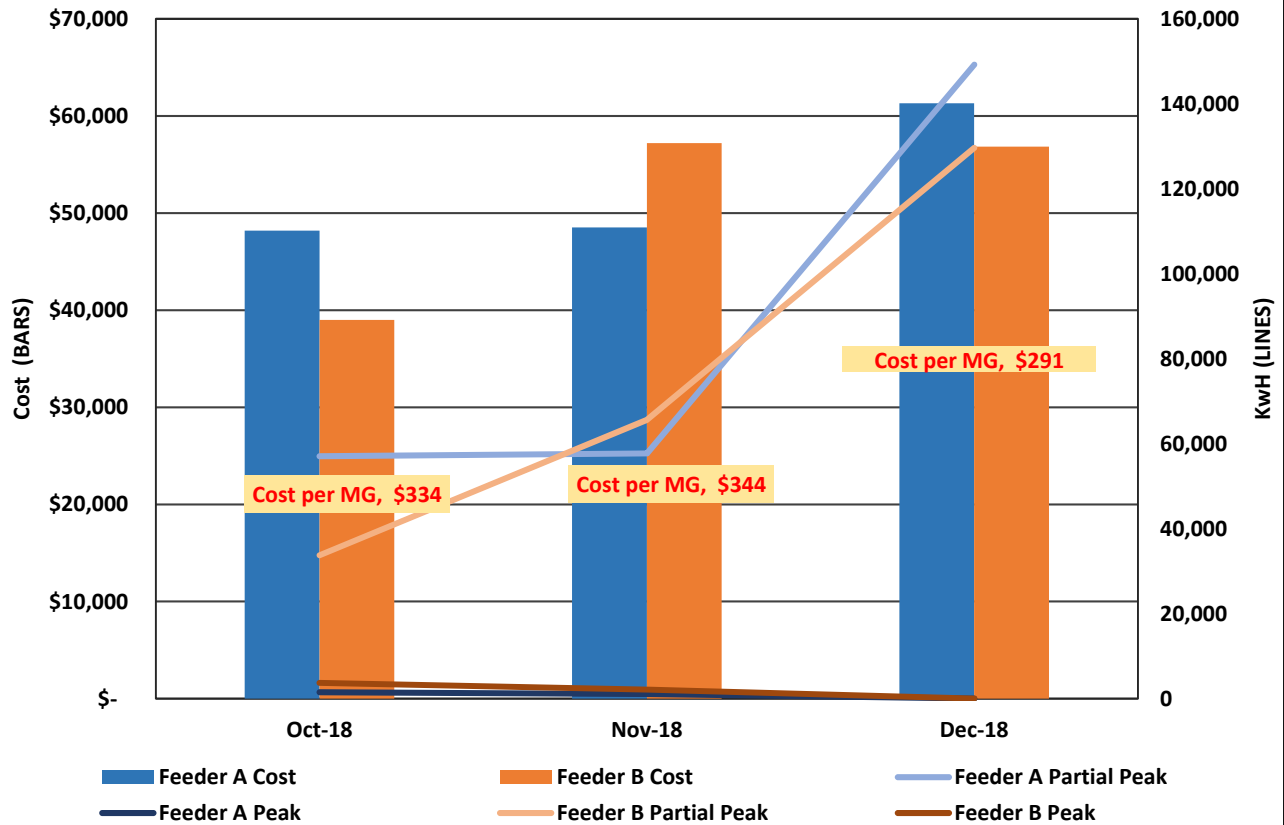
QUARTERLY REPORT OF OPERATIONS
LAVWMA PUMPING AND CONVEYANCE SYSTEM
2nd Quarter FY 2018-2019: October to December 2018

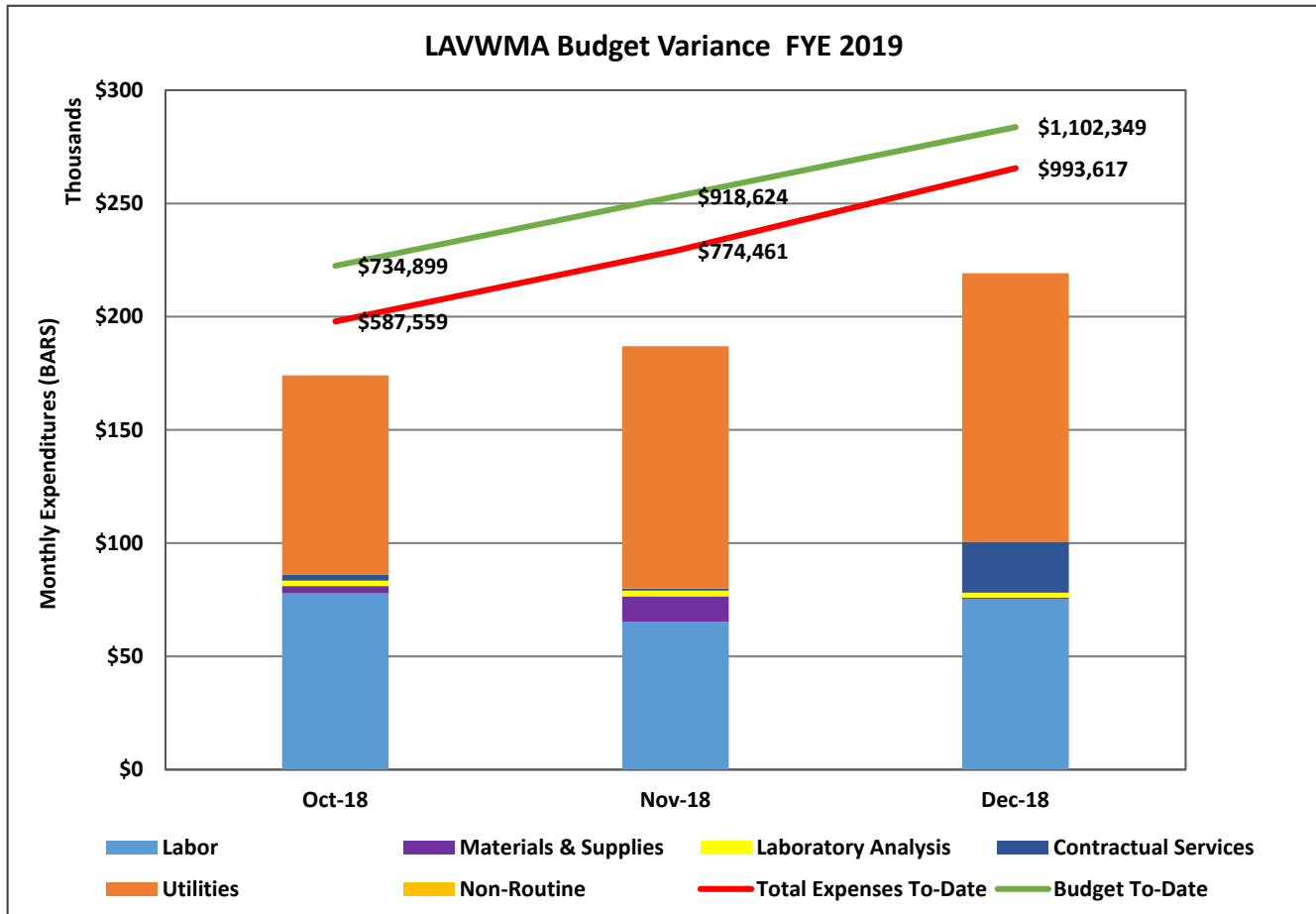
<u>TABLE OF CONTENTS</u>	<u>Page</u>
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LAVWMA Monthly Export Flows and Pumping Efficiency

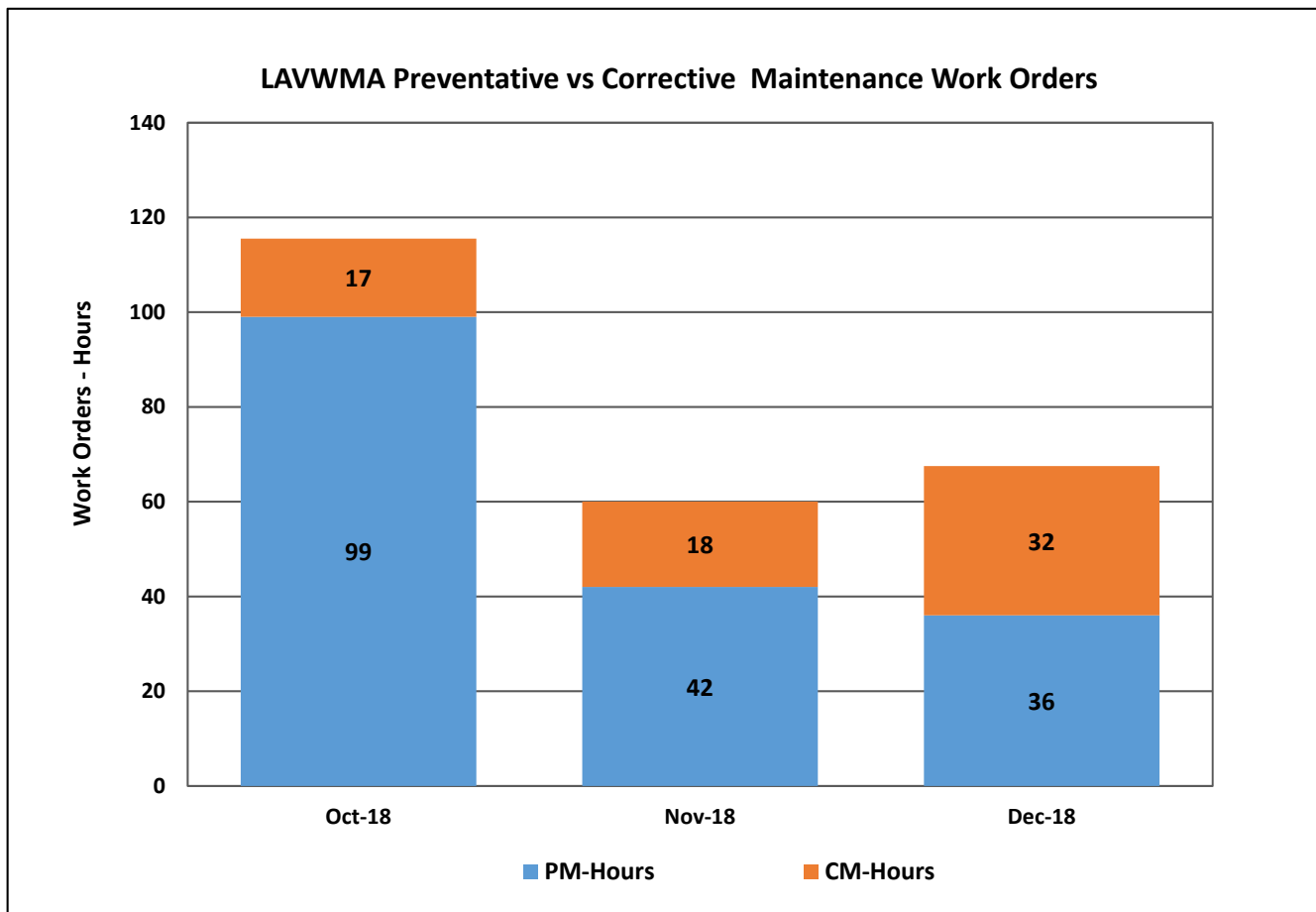


LAVWMA Energy Consumption - Feeder A and Feeder B





* Red and green lines not to scale with bars; for reference only



QUARTERLY REPORT OF OPERATIONS
LAVWMA PUMPING AND CONVEYANCE SYSTEM
2nd Quarter FY 2018-2019: October to December 2018

1. EXECUTIVE SUMMARY

The LAVWMA pumping and effluent conveyance system operated normally during the second quarter of FY 2018-2019. During the quarter, a total of 1,137 million gallons of fully treated secondary effluent were pumped to San Francisco Bay via the East Bay Dischargers Authority (EBDA) outfall diffuser and San Leandro Sample Station (SLSS); the overall efficiency of the pumping system averaged 71%, with an average electrical cost of \$323 per million gallons, or \$105 per acre-foot. Total year-to-date O&M expenses were \$993,618 or 45.1% of the overall O&M budget amount of \$2,204,698 and the running average overall cost of operation was \$637 per million gallons pumped or \$207 per acre-foot.

2. OPERATIONS

During this reporting period, no unusual operational activities occurred. Monthly reports sent to EBDA which detail daily export flows and monitoring analysis of the treated effluent during the quarter are shown on Tables 9, 10, and 11.

3. MAINTENANCE

During the quarter, a total of 177 hours were spent on preventative maintenance (PM) work orders and 66 hours on corrective maintenance (CM) work orders on LAVWMA equipment and systems. No unusual maintenance activities occurred during this reporting period.

4. CAPITAL OUTLAY

No capital outlay expenditures to report for the quarter.

5. BUDGET VARIANCE AND EXPENSES

Second quarter labor expenses totaled \$218,442 for 1,390 man-hours of effort, an average of 2.7 full time equivalents (FTEs). Labor expenses utilized 89.9% of the budgeted labor amount as of quarter to date.

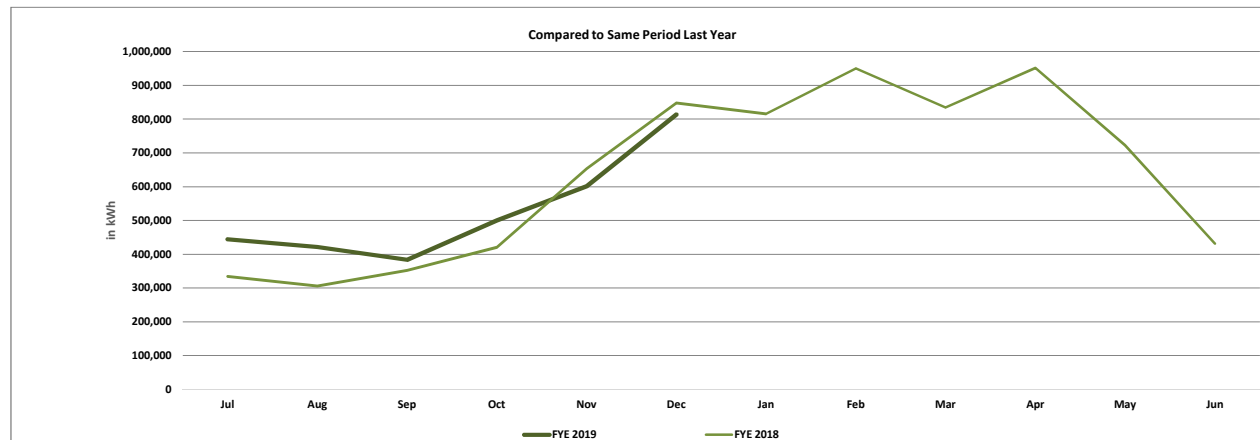
For the quarter, the total O&M expenses including labor, supplies, laboratory analysis, contractual services, and utilities totaled \$580,129, for an average cost of \$523 per million gallons pumped, or \$170 per acre-foot. The total expense for the Livermore sole use pipeline for the quarter was \$6,323.

Operation and maintenance (O&M) expenses and budget utilization details are shown on Tables 5, 6, 7, and 8.

TABLE 1 - Electric Usage, Efficiency and Costs

LAVWMA SYSTEM: Fiscal Year 2018-2019, 2nd Quarter

PG&E Service Accounts: Rate Schedule E20S														Total					
Acct # 8482061923-1						Acct # 8440395259-5					Billing				Total Export	Pumping			
Service A					Service B					Total			Flow	Energy		Cost		Efficiency	
Month	kWh	Peak	Partial Peak	Off Peak	\$	kWh	Peak	Partial Peak	Off Peak	\$	Days	kWh	\$/kWh	\$	MG	kWh/MG	\$/MG	\$/AF	%
Jul-18	129,401	0	39,387	90,014	\$20,674	314,595	1,702	46,896	265,997	\$50,289	30	443,996	\$0.16	\$70,963	157	2,819	\$451	\$147	49.3%
Aug-18	134,678	0	41,284	93,394	\$21,238	287,141	2,120	19,805	265,216	\$47,483	32	421,819	\$0.16	\$68,722	154	2,731	\$445	\$145	50.9%
Sep-18	182,953	0	35,298	147,655	\$33,568	200,500	1,790	40,442	158,268	\$44,204	30	383,453	\$0.20	\$77,772	203	1,886	\$382	\$125	73.7%
Oct-18	285,369	1,497	57,045	226,827	\$48,178	214,531	3,696	33,738	177,097	\$38,986	32	499,900	\$0.17	\$87,164	261	1,916	\$334	\$109	72.6%
Nov-18	280,584	1,069	57,694	221,821	\$48,523	320,835	2,115	65,625	253,095	\$57,203	30	601,419	\$0.18	\$105,725	307	1,959	\$344	\$112	71.0%
Dec-18	416,465	0	149,226	267,239	\$61,305	397,086	0	129,643	267,443	\$56,842	29	813,551	\$0.15	\$118,147	406	2,004	\$291	\$95	69.4%
Jan-19																			
Feb-19																			
Mar-19																			
Apr-19																			
May-19																			
Jun-19																			
Quarter																			
Average	327,473				\$52,669	310,817				\$51,010	30	638,290	\$0.17	\$103,679	325	1,960	\$323	\$105	71.0%
Total	982,418				\$158,006	932,452				\$153,031	91	1,914,870		\$311,037	974	5,879			
Minimum	280,584				\$48,178	214,531				\$38,986	29	499,900	\$0.15	\$87,164	261	1,916	\$291	\$95	69.4%
Maximum	416,465				\$61,305	397,086				\$57,203	32	813,551	\$0.18	\$118,147	406	2,004	\$344	\$112	72.6%
YTD																			
Average	238,242				\$38,914	289,115				\$49,168	31	527,356	\$0.17	\$88,082	248	2,219	\$375	\$122	64.5%
Total	1,429,450				\$233,486	1,734,688				\$295,007	183	3,164,138		\$528,493	1,489	13,315			
Minimum	129,401				\$20,674	200,500				\$38,986	29	383,453	\$0.15	\$68,722	154	1,886	\$291	\$95	49.3%
Maximum	416,465				\$61,305	397,086				\$57,203	32	813,551	\$0.20	\$118,147	406	2,819	\$451	\$147	73.7%

**NOTES:**

1) For this table, read dates, electric usage, and export flows are matched to PG&E billing periods: September 9/13/18 - 10/14/18; October 10/15/18 - 11/13/18; December 11/14/18 - 12/12/2018.

3) Pumping efficiency is based on continuous average flows and a TDH of 442.8 feet, including static lift of 408.8 feet and piping losses of 34 feet (per Charlie Joyce, B&C, 2/12/07).

TABLE 2 - Pump Run Time Hours

LAVWMA SYSTEM: Fiscal Year 2018-2019, 2nd Quarter

Month	Pump No. 1	Pump No. 2	Pump No. 3	Pump No. 4	Pump No. 5	Pump No. 6	Pump No. 7	Pump No. 8	Pump No. 9	Pump No. 10	TOTAL	
	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Pump Run Hours	Pump Utilization %
Jul-18	0	303	0	0	0	0	305	0	0	0	609	8.2%
Aug-18	0	167	0	210	0	0	164	213	9	30	793	10.7%
Sep-18	0	91	0	291	0	0	14	314	15	275	1,001	13.9%
Oct-18	134	30	10	347	72	0	19	325	161	265	1,362	18.3%
Nov-18	168	45	201	404	6	203	222	256	174	51	1,731	24.0%
Dec-18	0	506	0	435	0	403	0	479	0	474	2,298	30.9%
Jan-19												
Feb-19												
Mar-19												
Apr-19												
May-19												
Jun-19												
Quarter												
Average	100	194	71	395	26	202	80	353	112	263	1,797	24.4%
Total	301	581	212	1,186	78	606	240	1,060	335	790	5,390	
Minimum	0	30	0	347	0	0	0	256	0	51	1,362	8.2%
Maximum	168	506	201	435	72	403	222	479	174	474	2,298	13.9%
YTD												
Average	50	190	35	281	13	101	121	264	60	183	1,299	17.7%
Total	301	1,142	212	1,687	78	606	724	1,587	360	1,095	7,793	
Minimum	0	30	0	0	0	0	0	0	0	0	609	8.2%
Maximum	168	506	201	435	72	403	305	479	174	474	2,298	30.9%

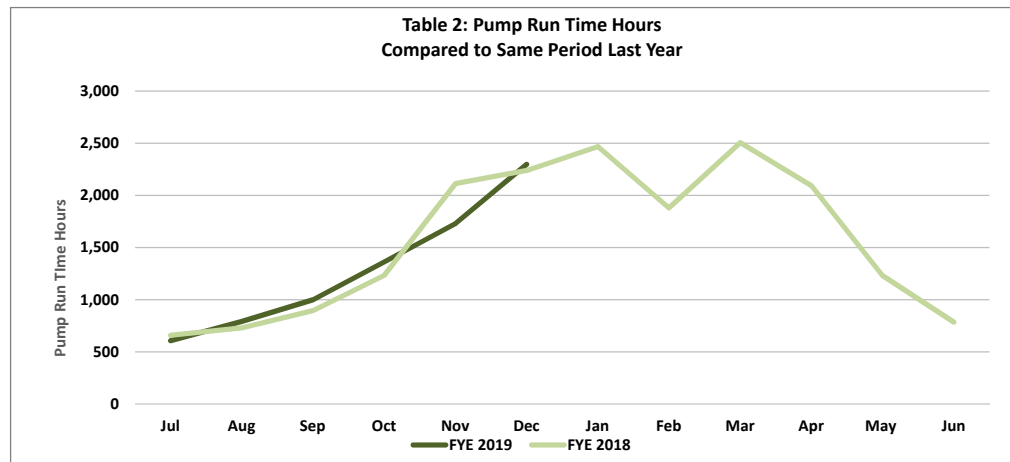
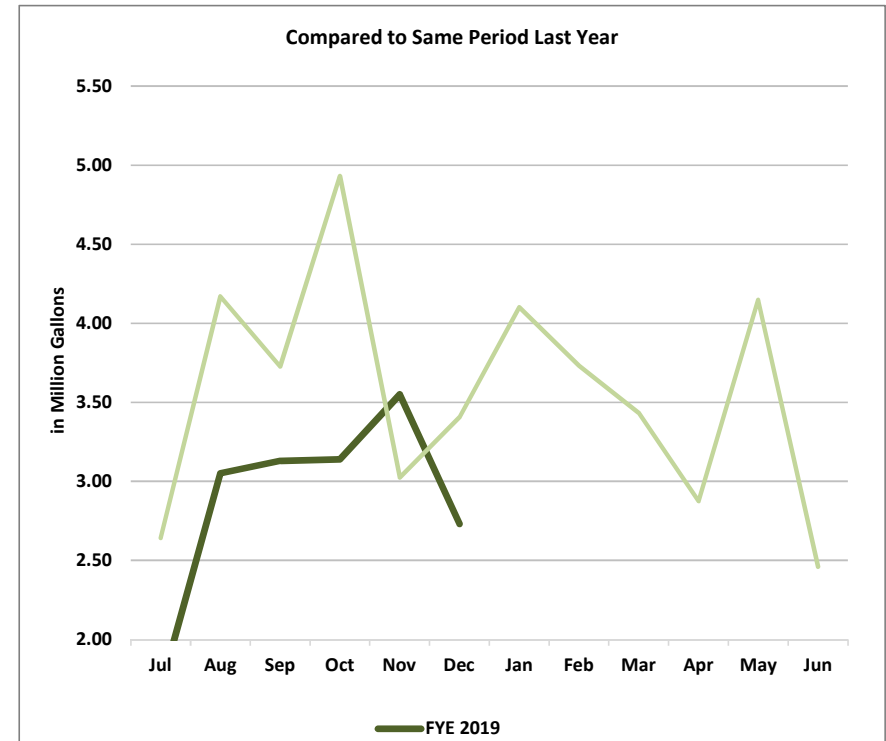


TABLE 3 - Monthly Average Storage Basin Levels and Volume

LAVWMA SYSTEM: Fiscal Year 2018-2019, 2nd Quarter

Month	Average Daily Volume			Average Volume Stored MG	Storage Available MG	Storage Basin Utilization %
	Basin No. 1	Basin No. 2	Basin No. 3			
	Feet	Feet	Feet			
Jul-18	1.06	0.66	1.72	1.69	18	9.4%
Aug-18	2.75	0.17	3.30	3.05	18	16.9%
Sep-18	3.49	0.15	2.67	3.13	18	17.4%
Oct-18	1.35	1.22	3.33	3.14	18	17.4%
Nov-18	3.11	0.00	3.70	3.55	18	19.7%
Dec-18	2.48	0.00	2.91	2.73	18	15.2%
Jan-19						
Feb-19						
Mar-19						
Apr-19						
May-19						
Jun-19						
Quarter						
Average	2.31	0.41	3.31	3.14		17.4%
Minimum	1.35	0.00	2.91	2.73		15.2%
Maximum	3.11	1.22	3.70	3.55		19.7%
YTD						
Average	2.37	0.37	2.94	2.88		16.0%
Minimum	1.06	0.00	1.72	1.69		9.4%
Maximum	3.49	1.22	3.70	3.55		19.7%



Note: Total available storage volume is 18 million gallons.

TABLE 4 - Monthly Export Flow

LAVVMA SYSTEM: Fiscal Year 2018-2019, 2nd Quarter

	Dublin San Ramon	Pleasanton	Livermore	Combined Export	
	Flow *	Flow *	Flow	Flow	Total for
Month	MG	MG	MG	MG	Quarter
Jul-18	0	76	82	158	562
Aug-18	0	93	88	181	
Sep-18	17	114	93	223	
Oct-18	52	126	111	289	
Nov-18	111	139	114	363	1,137
Dec-18	180	167	138	485	
Jan-19					
Feb-19					
Mar-19					
Apr-19					
May-19					
Jun-19					
<u>Quarter</u>					
Total	343	432	362	1,137	
Average	114	144	121	379	
Minimum	52	126	111	289	
Maximum	180	167	138	485	
<u>YTD</u>					
Total	360	714	625	1,699	
Average	60	119	104	283	
Minimum	0	76	82	158	
Maximum	180	167	138	485	

* Monthly totals do not include flows diverted for recycling use by DERWA and Pleasanton.

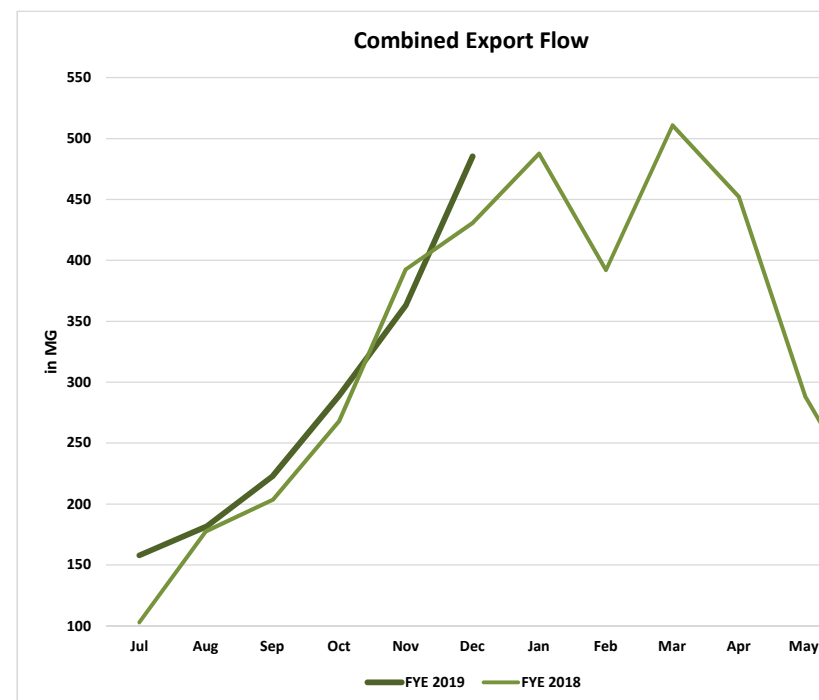


TABLE 5 - Labor Effort, Expenditures, and Budget Utilization

LAVWMA SYSTEM: Fiscal Year 2018-2019, 2nd Quarter

FY Labor Budget \$864,466

Month	Billed	FTE	Labor Invoice	YTD	Budget Utilization	Labor Budget Remaining	Export Flow	
	Labor Hours			Labor Budget			MG	AF
Jul-18	477.5	2.8	\$74,454	\$72,039	103.4%	\$790,012	158	485
Aug-18	314.5	1.8	\$49,073	\$144,078	85.7%	\$740,939	181	556
Sep-18	309.3	1.8	\$46,675	\$216,117	78.8%	\$694,264	223	685
Oct-18	493.5	2.8	\$77,822	\$288,155	86.1%	\$616,442	289	887
Nov-18	418.0	2.4	\$65,362	\$360,194	87.0%	\$551,080	363	1,114
Dec-18	478.3	2.8	\$75,258	\$432,233	89.9%	\$475,822	485	1,489
Jan-19							0	
Feb-19							0	
Mar-19							0	
Apr-19							0	
May-19							0	
Jun-19							0	
<u>QUARTER</u>								
Total	1,389.8		\$218,442				1,137	3,491
Average	463.3	2.7	\$72,814				379	1,164
Minimum	418.0	2.4	\$65,362				289	887
Maximum	493.5	2.8	\$77,822				485	1,489
<u>YTD</u>								
Total YTD	2,491.0		\$388,644		45.0%	\$475,822	1,699	5,216
Average YTD	415.2	2.4	\$64,774				142	869
Minimum	309.3	1.8	\$46,675				0	485
Maximum	493.5	2.8	\$77,822				485	1,489

TABLE 6 - O&M Expenditures and Budget Utilization**LAVWMA SYSTEM: Fiscal Year 2018-2019, 2nd Quarter****Total O&M Budget: \$2,204,698**

Month	Labor Expenses	A/P Expenses	Total O&M Expenses	YTD O&M Budget	Budget Utilization	O&M Budget Remaining	Overall O&M Cost		Export Flow	
							\$/MG	\$/AF	MG	AF
Jul-18	\$74,454	\$54,197	\$128,650	\$183,725	70.0%	\$2,076,048	\$815	\$266	158	485
Aug-18	\$49,073	\$105,718	\$154,791	\$367,450	77.1%	\$1,921,256	\$854	\$278	181	556
Sep-18	\$46,675	\$83,372	\$130,047	\$551,175	75.0%	\$1,791,209	\$583	\$190	223	685
Oct-18	\$77,822	\$96,248	\$174,071	\$734,899	80.0%	\$1,617,138	\$602	\$196	289	887
Nov-18	\$65,362	\$121,540	\$186,902	\$918,624	84.3%	\$1,430,236	\$515	\$168	363	1,114
Dec-18	\$75,258	\$143,898	\$219,156	\$1,102,349	90.1%	\$1,211,080	\$452	\$147	485	1,489
Jan-19										
Feb-19										
Mar-19										
Apr-19										
May-19										
Jun-19										
<u>QUARTER</u>										
Total	\$218,442	\$361,687	\$580,129						1,137	3,491
Average	\$72,814	\$120,562	\$193,376				\$523	\$170	379	1,164
Minimum	\$65,362	\$96,248	\$174,071				\$452	\$147	289	887
Maximum	\$77,822	\$143,898	\$219,156				\$602	\$196	485	1,489
<u>YTD</u>										
Total YTD	\$388,644	\$604,974	\$993,618		45.1%	\$1,211,080			1,699	5,216
Average YTD	\$64,774	\$100,829	\$165,603				\$637	\$207	283	869
Minimum	\$46,675	\$54,197	\$128,650				\$452	\$147	158	485
Maximum	\$77,822	\$143,898	\$219,156				\$854	\$278	485	1,489

TABLE 7 - O&M Expenditures and Budget Utilization for Livermore Sole Use Facilities

LAVWMA SYSTEM: Fiscal Year 2018-2019, 2nd Quarter

	Livermore Sole Use Facilities		
Month	Labor	A/P	Total
-----	Expenses	Expenses	Expenses
-----	-----	-----	-----
Jul-18	\$1,485	\$185	\$1,670
Aug-18	\$6,664	\$186	\$6,850
Sep-18	\$174	\$240	\$414
Oct-18	\$875	\$171	\$1,046
Nov-18	\$1,138	-\$230	\$908
Dec-18	\$4,310	\$0	\$4,310
Jan-19			
Feb-19			
Mar-19			
Apr-19			
May-19			
Jun-19			
<u>Quarter</u>			
Total	\$6,323	-\$59	\$6,264
Average	\$2,108	-\$20	\$2,088
Minimum	\$875	-\$230	\$908
Maximum	\$4,310	\$171	\$4,310
<u>YTD</u>			
Total	\$14,646	\$552	\$15,198
Average	\$2,441	\$92	\$2,533
Minimum	\$174	-\$230	\$414
Maximum	\$6,664	\$240	\$6,850

Table 8

LAVWMA FY 2018-2019
BUDGET COMPARISON TO ACTUAL EXPENSES

Current FY Period: 6

ACTUAL EXPENSES BILLED TO LAVWMA FOR REGULAR O&M															
	Approved Budget	July	August	September	October	November	December	January	February	March	April	May	June	YTD	YTD
	FY 2018-2019	2018	2018	2018	2018	2018	2018	2019	2019	2019	2019	2019	2019	TOTAL	Budget
Labor															
Staff	\$864,466	\$74,454	\$49,073	\$46,675	\$77,822	\$65,362	\$75,258							\$388,644	\$432,233
Subtotal	\$864,466	\$74,454	\$49,073	\$46,675	\$77,822	\$65,362	\$75,258	\$0	\$0	\$0	\$0	\$0	\$0	\$388,644	\$432,233
Materials & Supplies															
Operations Supplies	\$14,200	\$0	\$15	\$0	\$0	\$0	\$53							\$68	\$7,100
Mechanical Supplies	\$25,000	\$819	\$25	\$252	\$80	-\$797								\$379	\$12,500
Electrical Supplies	\$24,500	\$0	\$653	\$0	\$3,114	\$11,934	\$594							\$16,295	\$12,250
Subtotal	\$63,700	\$819	\$693	\$252	\$3,193	\$11,137	\$647	\$0	\$0	\$0	\$0	\$0	\$0	\$16,742	\$31,850
Laboratory Analysis															
Compliance Testing	\$18,000	\$712	\$890	\$712	\$890	\$712	\$712							\$4,628	\$9,000
Operational Support Testing	\$3,700	\$330	\$330	\$330	\$330	\$330	\$330							\$1,980	\$1,850
Special Sampling	\$5,000	\$1,156	\$1,445	\$1,156	\$1,156	\$1,445	\$1,156							\$7,514	\$2,500
Subtotal	\$26,700	\$2,198	\$2,665	\$2,198	\$2,376	\$2,487	\$2,198	\$0	\$0	\$0	\$0	\$0	\$0	\$14,122	\$13,350
Contractual Services															
Sub-surface Repairs	\$5,000	\$0	\$0	\$0	\$0	\$0								\$0	\$2,500
Street Sweeping	\$5,000	\$0	\$0	\$550	\$220	\$220	\$275							\$1,265	\$2,500
Cathodic Protection	\$26,000	\$0	\$0	\$0	\$0	\$0								\$0	\$13,000
Underground Service Alert	\$1,140	\$0	\$3,782	\$0	\$0	\$0								\$3,782	\$570
SCADA/PowerXpert software support	\$10,000	\$0	\$4,376	\$0	\$0	\$0	\$5,270							\$9,646	\$5,000
Rectifier SCADA (5 yr contract)	\$0	\$0	\$0	\$0	\$0	\$0								\$0	\$0
HVAC Maintenance/Repairs	\$750	\$0	\$405	\$0	\$0	\$0								\$405	\$375
Termite/Pest Control	\$900	\$0	\$152	\$0	\$152	\$76								\$380	\$450
Landscape/weed maintenance	\$8,500	\$0	\$1,960	\$980	\$1,960	\$0	\$980							\$5,881	\$4,250
Janitorial Service	\$0	\$0	\$550	\$275	\$275	\$275	\$275							\$0	\$0
Fire Extinguisher Maint	\$200	\$0	\$0	\$0	\$0	\$0								\$0	\$100
Postage/Shipping Charges	\$250	\$0	\$0	\$0	\$0	\$0								\$0	\$125
Professional Services, misc	\$10,000	\$0	\$866	\$9	\$9	\$391	\$15,671							\$16,945	\$5,000
Subtotal	\$67,740	\$0	\$12,091	\$1,814	\$2,616	\$962	\$22,471	\$0	\$0	\$0	\$0	\$0	\$0	\$39,954	\$33,870
Utilities															
Electricity (PG&E)	\$1,157,313	\$50,790	\$90,269	\$78,360	\$88,062	\$106,186	\$118,147							\$531,814	\$578,656
Water & Sewer (Pleasanton)	\$1,000	\$0	\$0	\$151	\$0	\$154								\$305	\$500
Water (EBMUD)	\$880	\$0	\$0	\$173	\$0	\$178								\$352	\$440
Telephone/communications	\$4,500	\$389	\$0	\$425	\$0	\$435	\$435							\$1,684	\$2,250
WW Treatment (DSRSD)	\$2,500	\$0	\$0	\$0	\$0	\$0								\$0	\$1,250
Subtotal	\$1,166,193	\$51,179	\$90,269	\$79,108	\$88,062	\$106,954	\$118,583	\$0	\$0	\$0	\$0	\$0	\$0	\$534,155	\$583,096
Non-Routine															
Pump Efficiency Testing	\$0	\$0	\$0	\$0	\$0	\$0								\$0	\$0
Corrosion Studies/ Inspections	\$5,000	\$0	\$0	\$0	\$0	\$0								\$0	\$2,500
Med Voltage Switchgear Tri-Annual PM	\$10,900	\$0	\$0	\$0	\$0	\$0								\$0	\$5,450
Subtotal	\$15,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$7,950
Monthly Total	\$2,204,698	\$128,650	\$154,792	\$130,047	\$174,070	\$186,902	\$219,156	\$0	\$0	\$0	\$0	\$0	\$0	\$993,617	\$1,102,349
YTD Total		\$128,650	\$283,442	\$413,489	\$587,559	\$774,461	\$993,617							90% of YTD Budge	
Export Flow, mg	4,015	158	181	223	289	363	485							1,699	2,008
Pumping Efficiency		49.3%	50.9%	73.7%	72.6%	71.0%	69.4%								
Monthly Cost, \$/mg		\$815	\$854	\$583	\$602	\$515	\$452								
YTD Running Cost, \$/mg	\$549	\$815	\$836	\$736	\$690	\$638	\$585								

November - Materials & Supplies, Mechanical - credit from an old PO for seals

Table 8

LAVWMA
BUDGET COMPARISON TO ACTUAL EXPENSES

Current FY Period: **6**

ACTUAL EXPENSES BILLED TO LAVWMA FOR REGULAR O&M														
FY 2018-2019	Jul 2018	Aug 2018	Sep 2018	Oct 2018	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	YTD TOTAL	YTD Budget
<i>Estimated Personnel Hours</i>														
Division 50 - Ops Admin	0	-	-	-	-	-	-	-	-	-	-	-	-	-
	0	-											-	-
Division 51 - FOD	52	-	-	16.50	8.00	-	-	-	-	-	-	-	24.50	26.00
Water/Wastewater Sys Lead Op	0												-	-
Water/Wastewater Sys OP IV-On Call	0												-	-
Water/Wastewater Sys OP IV	32												-	16.00
Water/Wastewater Sys OP III	0			8.00									8.00	-
Water/Wastewater Sys OP II	0			8.50	8.00								16.50	-
Maintenance Worker II	16												-	8.00
Supervisor	4												-	2.00
Division 52 - WWTP	2,996	204.50	154.25	184.00	232.00	223.50	289.50	-	-	-	-	-	1,287.75	1,498.00
Process Lead Operator IV/IV	200	19.00	14.50	16.50	23.00	17.00	25.00						115.00	100.00
Senior WWTP Operator III	590	55.50	43.50	34.00	147.00	101.00	194.50						575.50	295.00
Operator II	1,000	50.00	61.00	52.00	58.50	101.50	64.00						387.00	500.00
Operator II (SLSS)	1,156	62.00	26.00	74.00										578.00
Supervisor	50	18.00	9.25	7.50	3.50	4.00	6.00						48.25	25.00
Division 53 - MECH	1,612	170.00	125.25	89.25	87.50	96.50	89.25	-	-	-	-	-	657.75	806.00
Senior Mechanic-Crane Cert	380	37.00	45.25	26.00	24.00	25.00	6.00						163.25	190.00
Senior Mechanic - USA	82	7.00		10.25	15.00	11.00	3.75						47.00	41.00
Mechanic I/II	960	103.75	25.00	9.00	12.50	21.50							171.75	480.00
Mechanic II-Crane Cert	0	14.50	40.50	38.00	35.00	35.50	57.50						221.00	-
Mechanic II - USA	140	6.75											6.75	70.00
Mechanic II-Crane Cert - USA	0	1.00	14.50	6.00	1.00	3.50	22.00						48.00	-
Supervisor	50												-	25.00
Division 54 - ELEC	850	94.00	32.00	19.00	160.50	87.50	97.00	-	-	-	-	-	490.00	425.00
Senior Instrument/Controls Tech	8	2.00											2.00	4.00
Instrument Tech	260	67.00	25.00	1.00	107.00	56.50							256.50	130.00
OPS Control Sys Spec	250		2.00	5.00	30.00	8.00	32.00						77.00	125.00
Senior Electrician	108					10.00							10.00	54.00
Electrician	200	25.00	5.00	13.00	22.50	12.00	65.00						142.50	100.00
Supervisor	24	-	-		1.00	1.00							2.00	12.00
Division 26 - SAFETY	48	-	-	-	-	-	-	-	-	-	-	-	-	24.00
Safety Officer	48	-	-	-	-	-	-	-	-	-	-	-	-	24.00
Division 40 - ENG	100	9.00	3.00	0.50	5.50	10.50	2.50	-	-	-	-	-	31.00	50.00
Associate/Senior Civil Engineer-SME	100	9.00	3.00	0.50	5.50	2.50							20.50	50.00
<i>Total Estimated Personnel Hours</i>	5,658													
Total Monthly Hours		477.50	314.50	309.25	493.50	418.00	478.25	-	-	-	-	-	2,491.00	2,829.00

Table 9
Report for LAVWMA - FY 2018-2019, 2nd Quarter
Microbiological Results, San Leandro Sample Station
Dublin San Ramon Services District Laboratory
ELAP Certificate # 1272

COLLECTION	FECAL COLIFORM	ENTEROCOCCUS
DATE	MPN/100 mL	MPN/100 mL
10/4/2018	50	< 10
10/11/2018	80	< 10
10/18/2018	50	< 10
10/25/2018	24	< 10
11/1/2018	8	< 10
11/8/2018	30	< 10
11/15/2018	33	< 10
11/21/2018	26	< 10
11/29/2018	2	< 10
12/6/2018	220	< 10
12/13/2018	2	< 10
12/20/2018	50	10
12/27/2018	8	< 10
MEDIAN	30	10
GEOMEAN	46	10

MPN = Most Probable Number

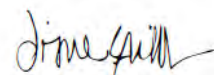
Table 10

Monthly Report for LAVWMA - October 2018
Dublin San Ramon Services District Laboratory
ELAP Certificate # 1272

DATE	FLOW (MGD)	CBOD (mg/L) (kg/d)		TSS (mg/L) (kg/d)		MINIMUM pH (units)	MAXIMUM pH (units)	CHLORINE RESIDUAL (mg/L)	CHLORINE RESIDUAL (SLS STATION) (mg/L)
1	7.10					7.00	7.11	0.260	0.111
2	10.47					6.94	7.05	0.976	0.024
3	5.39	2.7	55	11.6	237	6.98	7.09	1.430	0.422
4	8.67					7.00	7.06	0.960	0.862
5	8.75					6.99	7.07	1.491	0.479
6	9.80					7.00	7.39	1.852	0.419
7	8.56					7.07	7.12	1.204	0.289
8	8.55					7.05	7.13	1.860	0.835
9	11.00					7.03	7.14	2.494	0.261
10	9.65					7.06	7.27	1.851	0.000
11	8.82	4.9	164	8.4	280	7.05	7.28	2.167	0.000
12	10.28					7.06	7.57	1.614	0.000
13	8.71					7.30	7.56	1.900	0.000
14	8.12					7.31	7.36	1.801	0.001
15	8.95					7.32	7.41	1.459	0.006
16	11.50					7.27	7.47	1.457	0.005
17	7.53	2.7	77	6.4	183	7.30	7.81	2.005	0.004
18	8.83					7.24	7.46	1.646	0.081
19	8.12					7.22	7.80	1.738	0.048
20	8.02					7.36	7.88	1.557	0.030
21	8.72					7.36	7.48	1.524	0.023
22	7.31					7.36	7.48	1.777	0.015
23	12.40					7.28	7.39	1.421	0.009
24	8.48	4.4	141	8.4	270	7.23	7.40	1.355	0.007
25	10.20					7.31	7.46	1.415	0.038
26	11.34					7.34	7.52	1.194	0.033
27	10.94					7.34	7.55	1.188	0.039
28	8.61					7.34	7.44	1.115	0.029
29	9.67					7.34	7.45	1.519	0.029
30	15.19					7.27	7.42	1.998	0.018
31	9.45	4	143	9.0	322	7.34	7.46	1.643	0.016
MAX.	15.19	4.90	164	11.6	322	7.36	7.88	2.49	0.86
MIN.	5.39	2.7	55	6.4	183	6.94	7.05	0.26	0.00
AVE.	9.33	3.7	116	8.8	258	7.20	7.39	1.54	0.13
TOTAL	289.12								

Samples collected from LAVWMA Export Pump Station, except for chlorine at the San Leandro Sampling Station as noted.
MGD = Millions of gallons per day; mg/L = milligrams per liter; kg/d = kilograms per day

Authorized for release by:


Diane Griffin, Laboratory Director

Date:

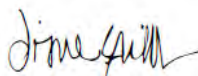
11/20/2018

Table 10
Monthly Report for LAVWMA - November 2018
Dublin San Ramon Services District Laboratory
ELAP Certificate # 1272

DATE	FLOW (MGD)	CBOD (mg/L) (kg/d)		TSS (mg/L) (kg/d)		MINIMUM pH (units)	MAXIMUM pH (units)	CHLORINE RESIDUAL (mg/L)	CHLORINE RESIDUAL (SLS STATION) (mg/L)
1	9.84					7.30	7.47	2.059	0.015
2	10.84					7.29	7.52	1.973	0.018
3	10.15					7.35	7.48	1.597	0.008
4	10.05					7.38	7.47	1.628	0.005
5	11.76					7.37	7.46	1.827	0.006
6	12.80					7.18	7.41	1.469	0.006
7	10.35	3.4	133	9.2	360	7.30	7.42	1.153	0.010
8	11.46					7.29	7.50	1.481	0.013
9	10.12					7.31	7.48	1.523	0.012
10	10.75					7.25	7.49	1.410	0.011
11	8.53					7.24	7.46	1.582	0.009
12	11.29					7.24	7.41	1.486	0.009
13	13.79					7.22	7.45	1.149	0.182
14	11.01	3.8	158	10.0	417	7.36	7.42	0.241	0.064
15	9.75					7.23	7.55	1.344	0.070
16	13.66					7.36	7.58	1.357	0.080
17	10.26					7.35	7.49	1.877	1.051
18	11.77					7.29	7.40	1.963	0.669
19	10.47					7.27	7.39	1.781	0.059
20	13.56					7.23	7.42	1.497	0.272
21	8.93	3.94	133	10.0	338	7.19	7.45	1.495	0.403
22	11.89					7.15	7.34	1.604	0.186
23	11.36					7.14	7.26	1.929	0.155
24	15.61					7.09	7.25	2.046	0.094
25	15.64					7.17	7.22	1.747	0.022
26	15.33					7.13	7.26	1.602	0.006
27	16.41					7.14	7.25	2.377	0.005
28	12.54	4.1	195	12.2	579	7.10	7.22	1.697	0.611
29	16.19					7.18	7.31	1.486	1.055
30	16.90					7.20	7.36	1.822	0.548
MAX.	16.90	4.1	195	12.2	579	7.38	7.58	2.377	1.055
MIN.	8.53	3.4	133	9.2	338	7.09	7.22	0.241	0.005
AVE.	12.10	3.8	155	10.4	424	7.24	7.41	1.607	0.188
TOTAL	363.01								

Samples collected from LAVWMA Export Pump Station, except for chlorine at the San Leandro Sampling Station as noted.
MGD = Millions of gallons per day; mg/L = milligrams per liter; kg/d = kilograms per day

Authorized for release by:


Diane Griffin, Laboratory Director

Date:

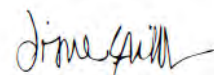
1/30/2019

Table 10
Monthly Report for LAVWMA - December 2018
Dublin San Ramon Services District Laboratory
ELAP Certificate # 1272

DATE	FLOW (MGD)	CBOD (mg/L) (kg/d)		TSS (mg/L) (kg/d)		MINIMUM pH (units)	MAXIMUM pH (units)	CHLORINE RESIDUAL (mg/L)	CHLORINE RESIDUAL (SLS STATION) (mg/L)
1	17.43					7.22	7.34	1.163	0.025
2	14.89					7.22	7.40	1.600	0.038
3	16.50					7.28	7.34	1.695	0.002
4	17.12					7.22	7.33	3.019	0.002
5	16.44	5.1	317	10.4	647	7.23	7.33	3.133	0.002
6	14.77					7.25	7.32	2.250	0.002
7	14.67					7.24	7.29	2.171	0.002
8	15.15					7.24	7.31	2.380	0.000
9	14.82					7.15	7.28	2.286	0.000
10	10.81					7.16	7.22	2.806	0.000
11	16.92					7.13	7.22	2.947	0.000
12	15.25	4.4	254	12.4	716	7.17	7.24	2.202	0.002
13	15.19					7.19	7.26	2.060	0.041
14	15.40					7.14	7.22	2.695	0.104
15	15.20					7.17	7.22	3.214	0.006
16	14.39					7.16	7.22	2.113	0.004
17	15.19					7.18	7.30	1.789	0.000
18	16.54					7.17	7.29	1.854	0.000
19	16.23	6.9	424	16.0	983	7.17	7.24	1.816	0.001
20	14.79					7.19	7.29	2.209	0.001
21	15.81					7.20	7.70	2.063	0.000
22	16.30					7.31	7.44	2.103	0.007
23	16.34					7.34	7.42	1.433	0.002
24	16.18					7.36	7.40	1.693	0.000
25	17.81					7.33	7.44	1.747	0.000
26	17.68	11.5	769	20.0	1338	7.29	7.42	1.803	0.000
27	17.44					7.26	7.38	1.755	0.000
28	14.73					7.26	7.34	1.598	0.000
29	14.72					7.27	7.36	2.357	0.001
30	15.48					7.30	7.36	2.435	0.000
31	15.03					7.30	7.34	1.903	0.000
MAX.	17.81	11.50	769	20.0	1338	7.36	7.70	3.21	0.10
MIN.	10.81	4.4	254	10.4	647	7.13	7.22	1.16	0.00
AVE.	15.65	7.0	441	14.7	921	7.23	7.33	2.14	0.01
TOTAL	485.21								

Samples collected from LAVWMA Export Pump Station, except for chlorine at the San Leandro Sampling Station as noted.
MGD = Millions of gallons per day; mg/L = milligrams per liter; kg/d = kilograms per day

Authorized for release by:


Diane Griffin, Laboratory Director

Date:

1/30/2019

TABLE 11

**DUBLIN SAN RAMON SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY**

LAVWMA

Langelier pH Saturation Index

Collection DATE	TDS (mg/L)	Temp (°C)	Ca Hardness (mg/L CaCO ₃)	Alkalinity (mg/L CaCO ₃)	pH (Actual)	pH Saturation	Langlier Index
10/18/18	832	23.8	148	378	7.3	7.1	0.2
11/06/18	1080	23.2	210	490	7.1	6.9	0.2
12/04/18	800	20.2	150	391	7.4	7.1	0.3
MAXIMUM	1080	23.8	210	490	7.4	7.1	0.3
MINIMUM	800	20.2	148	378	7.1	6.9	0.2
AVERAGE	904	22.4	169	420	7.3	7.0	0.2

TABLE 11

**DUBLIN SAN RAMON SERVICES DISTRICT
WASTEWATER TREATMENT FACILITY**

DSRSD

Langelier pH Saturation Index

Collection DATE	TDS (mg/L)	Temp (°C)	Ca Hardness (mg/L CaCO ₃)	Alkalinity (mg/L CaCO ₃)	pH (Actual)	pH Saturation	Langlier Index
10/18/18	726	24.7	130	350	7.2	7.2	0.0
11/06/18	944	24.3	170	429	6.4	7.0	-0.7
12/04/18	710	21.6	144	376	7.4	7.1	0.3
MAXIMUM	944	24.7	170	429	7.4	7.2	0.3
MINIMUM	710	21.6	130	350	6.4	7.0	-0.7
AVERAGE	793	23.5	148	385	7.0	7.1	-0.1

TABLE 11

CITY OF LIVERMORE
LIVERMORE WATER RECLAMATION PLANT

Both pH Saturation Indices

Collection DATE	TDS (mg/L)	Temp (°C)	Ca Hardness (mg/L CaCO ₃)	Alkalinity (mg/L CaCO ₃)	pH (Actual)	pH Saturation	Langlier Index
10/03/18	650	26.0	70	297	7.5	7.5	0.0
11/06/18	610	23.0	90	337	7.1	7.4	-0.4
12/05/18	640	20.0	72	314	7.6	7.6	0.0
MAXIMUM	650	26.0	90	337	7.6	7.6	0.0
MINIMUM	610	20.0	70	297	7.1	7.4	-0.4
AVERAGE	633	23.0	77	316	7.4	7.5	-0.1

TABLE 12 – LAVWMA Routine and Emergency Contact Information

<i>Agency</i>	<i>Contact</i>	<i>Office</i>
DSRSD	Sue Stephenson, Community Affairs Supervisor	(925) 875-2295
LAVWMA	Chuck Weir, General Manager	(925) 875-2233

The routine, non-emergency contact information is as follows:

<i>Agency</i>	<i>Contact</i>	<i>Office</i>
DSRSD	WWTP Main Office/Control Room Office	(925) 846-4565
DSRSD	Shawn Quinlan, Mechanical Maintenance Supervisor	(925) 875-2358
DSRSD	Levi Fuller, WWTP Operations Supervisor	(925) 875-2300
DSRSD	Jeff Carson, Operations Manager	(925) 875-2345
DSRSD	Fax Machine	(925) 462-0658

The after-hours and emergency contact information is as follows:

<i>Agency</i>	<i>Contact</i>	<i>Cell</i>
DSRSD	24 Hour On Duty Operator	(925) 519-0557
DSRSD	Operator II On Duty	(925) 872-5887
DSRSD	Shawn Quinlan, Mechanical Maintenance Supervisor	(925) 570-7878 (925) 570-5745
DSRSD	Levi Fuller, WWTP Operations Supervisor	(925) 570-8775
DSRSD	Jeff Carson, Operations Manager	(925) 719-2997

The City of Livermore emergency contact information is as follows:

<i>Agency</i>	<i>Contact</i>	<i>Cell</i>
Livermore	24 Hour On Duty Operator	(925) 960-8160
Livermore	Darren Greenwood, Director of Public Works	(925) 525-4844
Livermore	Jimmie Truesdell, Water Resources Operations Manager	(925) 525-2016

The City of Pleasanton emergency contact information is as follows:

<i>Agency</i>	<i>Contact</i>	<i>Cell</i>
Pleasanton	24 Hour On Call Operator	(925) 437-3992
Pleasanton	Eric Amaro, Chief Utilities System Operator	(925) 437-3605

ITEM NO. 10 APPROVAL OF DUBLIN SAN RAMON SERVICES DISTRICT REQUEST TO DIVERT WASTEWATER FROM THE CENTRAL CONTRA COSTA SANITARY DISTRICT COLLECTION SYSTEM TO SUPPLEMENT THE DUBLIN SAN RAMON SERVICES DISTRICT AND EAST BAY MUNICIPAL UTILITIES DISTRICT RECYCLED WATER AGENCY (DERWA) SUPPLY

Action Requested

Adopt Resolution 19-02 Approving Dublin San Ramon Services District's (DSRSD) request to divert wastewater from the Central Contra Costa Sanitary District (Central San) collection system to supplement the Dublin San Ramon Services District and East Bay Municipal Utilities District Recycled Water Authority (DERWA) supply.

Summary

The wastewater influent to DSRSD's Regional Wastewater Treatment Facility serves as the source of supply to the DERWA Recycled Water Treatment Facility. During prolonged hot weather in the summer, the DERWA and Pleasanton recycled water demand exceeds the wastewater supply. DSRSD and EBMUD staff have evaluated several options to supplement the recycled water supply and have determined that the most viable option in the near term is to divert wastewater from the Central San collection system through DSRSD's collection system to DSRSD's treatment plant, for the purpose of producing and distributing recycled water. On January 17, 2019, the Central San Board of Directors authorized the General Manager to execute an agreement between Central San and DERWA, which allows for the diversion for a period of three years, with two possible one-year extensions.

A copy of the February 4, 2019 Agreement for the Temporary Diversion of Wastewater between Dublin San Ramon Services District – East Bay Municipal Utilities District Recycled Water Authority and Central Contra Costa Sanitary District is attached for the Board's information. The agreement makes it clear that this is a short-term arrangement. It is also clear that DSRSD is not providing "service" in the traditional sense to residents outside the service area as no fees for service are collected.

The agreement between DERWA and Central San states that the "Agreement is not intended to provide for Central San to make available a permanent wastewater supply to DERWA, nor does the Agreement require any negotiations between Central San and DERWA for a long-term supply Agreement". While DSRSD will be collecting and treating the diverted Central San wastewater, the service areas of the agencies will not change and there will be no payment to Central San for the wastewater. The wastewater will be only for the purposes of producing and distributing recycled water in coordination with DERWA, therefore the diverted wastewater will not result in any increase in disposal of wastewater through the LAVWMA system. In addition, there will be no cost to LAVWMA or its member agencies.

Paragraph 14 of the LAVWMA Agreement addresses “Service Area;” specifically that DSRSD may provide wastewater service, including collection, conveyance, treatment and disposal of raw wastewater to the areas within the city limits of San Ramon that DSRSD serves as of the date of the Agreement. Section 14.2.5 of the Agreement goes on to say that no Member Agency shall not serve any other area without the unanimous approval of the LAVWMA Board. There is some ambiguity in whether the diversion of wastewater contemplated under the DSRSD / EBMUD agreement constitutes “service” within the scope of LAVMWA’s JPA thereby requiring Board approval. Out of an abundance of caution, Staff is recommending that the Board act on the proposed agreement. LAVWMA’s JPA is drafted to limit expansion of services and Staff is recommending Board approval because DSRSD is undertaking the diversion on a temporary basis, is not expanding its service area, or providing a fee-based service. Reusing recycled water in the Livermore-Amador Valley is consistent with the Agency’s long-term vision under the Agreement of providing for alternate means of wastewater disposal.

As for scheduling, DSRSD intends to construct the diversion this spring and divert wastewater as soon as this summer. The project has been reviewed by DERWA and Central San and has been determined to be exempt from CEQA.

Recommendation

Adopt Resolution 19-02 Approving Dublin San Ramon Services District’s (DSRSD) request to divert wastewater in from the Central Contra Costa Sanitary District (Central San) collection system to supplement the Dublin San Ramon Services District and East Bay Municipal Utilities District Recycled Water Authority (DERWA) supply

Attachments

1. Resolution 19-02
2. Agreement for the Temporary Diversion of Wastewater between Dublin San Ramon Services District – East Bay Municipal Utilities District Recycled Water Authority and Central Contra Costa Sanitary District

Livermore-Amador Valley Water Management Agency

RESOLUTION NO. 19-02

A RESOLUTION OF THE LIVERMORE-AMADOR VALLEY WATER MANAGEMENT AGENCY APPROVING DUBLIN SAN RAMON SERVICES DISTRICT REQUEST TO DIVERT WASTEWATER FROM THE CENTRAL CONTRA COSTA SANITARY DISTRICT COLLECTION SYSTEM TO SUPPLEMENT THE DUBLIN SAN RAMON SERVICES DISTRICT AND EAST BAY MUNICIPAL UTILITIES DISTRICT RECYCLED WATER AGENCY (DERWA) SUPPLY

WHEREAS, the Livermore-Amador Valley Water Management Agency (“LAVWMA”) is a joint powers agency comprised of the cities of Livermore and Pleasanton and the Dublin San Ramon Services District;

WHEREAS, Dublin San Ramon Services District (DSRSD) requires additional influent flow to meet its recycled water demand for DERWA during hot weather;

WHEREAS, a thorough review of options has determined that the most viable source is the collection system from Central Contra Costa Sanitary District (CCCSD);

WHEREAS, DERWA and CCCSD approved an agreement on February 4, 2019 for the temporary diversion of wastewater to meet DERWA’s demand;

WHEREAS, the LAVWMA Joint Exercise of Powers Agreement (JPS) requires approval of the Board for a member agency to provide service outside its service area;

NOW, THEREFORE, BE IT RESOLVED by the Livermore-Amador Valley Water Management Agency the Board hereby approves the temporary diversion of wastewater from the CCCSD collection system to DSRSD to supplement the DERWA recycled water supply under the terms and conditions of the February 4, 2019 agreement.

DULY AND REGULARLY ADOPTED by LAVWMA’s Board of Directors this 20th day of February 2019 by the following vote:

AYES:

NOES:

ABSENT:

Madelyne Misheloff, Chair

ATTEST: _____
Charles V. Weir, General Manager

**AGREEMENT FOR THE TEMPORARY DIVERSION OF WASTEWATER BETWEEN
DUBLIN SAN RAMON SERVICES DISTRICT – EAST BAY MUNICIPAL UTILITY
DISTRICT RECYCLED WATER AUTHORITY AND CENTRAL CONTRA COSTA
SANITARY DISTRICT**

This Agreement for Temporary Diversion of Wastewater between the Dublin San Ramon Services District – East Bay Municipal Utility District Recycled Water Authority (DERWA) and Central Contra Costa Sanitary District (Central San) (“Agreement”) is made and entered into this 4th day of February, 2019. DERWA and Central San are individually referred to as "Party," and collectively as "Parties."

W I T N E S S E T H

WHEREAS, DERWA, a joint powers authority of Dublin San Ramon Services District (DSRSD) and East Bay Municipal Utility District (EBMUD), has a temporary need for supplemental wastewater influent to serve as a source for tertiary-treated recycled water throughout the EBMUD and DSRSD service areas; and

WHEREAS, DSRSD provides potable and recycled water to the Dougherty Valley portion of the City of San Ramon and wastewater collection and treatment to the southernmost portion of the City of San Ramon, and EBMUD provides potable water to all other areas of the City of San Ramon and recycled water to a portion of the City of San Ramon; and

WHEREAS, Central San provides wastewater collection, treatment, and disposal services to a major portion of the City of San Ramon, including the Dougherty Valley and has the temporary ability to redirect some of its wastewater to the DSRSD collection system; and

WHEREAS, DERWA has requested to temporarily divert a portion of Central San’s wastewater upstream of the San Ramon Pumping Station to serve as a source for the production of tertiary-treated recycled water at DSRSD’s treatment plant to help meet immediate recycled water demands in the EBMUD and DSRSD service areas while long-term supply options are identified; and

WHEREAS, Central San has completed a “Wholesale Recycled Water Opportunities Study” to identify potential large-scale recycled water projects at its main treatment plant with year-round demand that will maximize the beneficial use of its wastewater; and

WHEREAS, Central San, Contra Costa Water District (CCWD) and Santa Clara Valley Water District (SCVWD), are currently evaluating the feasibility of implementing the Refinery Recycled Water Exchange Project, in which Central San would provide, all year round, 20 million gallons per day (MGD) of recycled water to CCWD to serve to the Martinez refineries

and the freed up water supply would be transferred to SCVWD through a water exchange with CCWD; and

WHEREAS, if the Refinery Recycled Water Exchange Project moves forward in the future, Central San will need all the dry weather wastewater flow available in its service area at the time of implementation in order to reliably serve the project, in addition to other existing recycled water commitments; and

WHEREAS, Central San is interested in partnering with DERWA and its member agencies, during the term of this Agreement, to provide a temporary wastewater supply, at no cost or impact to Central San ratepayers, as a short-term measure to allow DERWA and its member agencies more time to develop long-term solutions for providing recycled water to the DERWA service area; and

WHEREAS, DERWA seeks, during the term of this Agreement, to receive and treat wastewater from Central San's service area, originating from a portion of the City of San Ramon, to serve as a source of recycled water supply for DERWA during peak summer recycled water demands; and

WHEREAS, at their August 16, 2018, meeting, the Central San Board of Directors adopted nine Guiding Principles for a temporary wastewater diversion agreement with DERWA, which are included in Exhibit B of this Agreement.

NOW, THEREFORE, in consideration of the recitals and mutual obligations herein expressed, DERWA and Central San agree as follows:

I. PURPOSE

1. The purpose of this Agreement is to set forth the terms, conditions and responsibilities of the parties for the design, construction and operation of a **"Temporary Wastewater Diversion Project"** (Project).
2. This Agreement is intended, as a short-term arrangement, to provide DERWA an as-needed temporary wastewater supply from the Central San service area to address their peak summer demand shortage.
3. This Agreement is not intended to provide for Central San to make available a permanent wastewater supply to DERWA, nor does this Agreement require any negotiations between Central San and DERWA for a long-term supply agreement.

II. GOOD FAITH, COOPERATION, AND SCHEDULE

1. Conditioned upon DERWA's funding of the expenses associated with design and construction of the Project, DERWA and Central San commit to diligently and in good faith cooperate towards the beneficial use of the Project.
2. Central San is committed to allowing diversion of available raw wastewater flow for the Project, with the understanding that the Central San's first priority is the safe and effective operation of Central San's wastewater collection system and San Ramon Pumping Station, which includes avoiding overflows, odor generation, and damage to Central San's infrastructure. As such, the Project will be designed, constructed, and operated to minimize disruption to Central San's operation.
3. The Parties agree to cooperate and work diligently to complete the Project and have it operational by the summer irrigation season of 2019.
4. DERWA will be responsible for all costs to prepare environmental documentation, obtain required permits, design, construct, operate, and maintain the Project, including those Central San costs identified as attributable to the operations and maintenance of the diversion structure and the modifications to the San Ramon Pumping Station.
5. Central San and DERWA shall work cooperatively to review and determine the Central San costs proposed to be paid by DERWA.
6. The Parties may form a technical committee or committees in order to ensure operational impacts to Central San are minimized and to determine and agree upon any costs incurred or claimed by Central San as a result of the Project.
7. At DERWA's request, DSRSD, pursuant to its agreements with DERWA, may act as its agent to prepare environmental documentation, obtain required permits, design, construct, operate, and maintain the Project.

III. TERM

While effective as of the date first written above, the initial term of this Agreement shall be for a period of three (3) years beginning from the date of Central San acceptance of the construction of the diversion structure and associated pipelines. This Agreement may be renewed for successive one (1) year terms by mutual written agreement of the Parties hereto, executed not less than three (3) months prior to the expiration of the Initial Term or any Renewal Term, as applicable.

Under no circumstances shall this Agreement, exceed a total period of five (5) years, including pursuant to any amendment or extension terms provided for herein. Any period longer than that timeframe would constitute a more permanent diversion, which is outside the purview of this agreement. A new agreement would have to be negotiated and executed at such time, if so desired by both parties.

IV. WASTEWATER DIVERSION PROJECT

A. Description

The Project will divert raw wastewater from the Central San collection system upstream of Central San Manhole 11 as shown on Exhibit A, which is attached hereto and incorporated herein by this reference. The facilities to be constructed and utilized include but are not limited to a concrete vault, approximately 60 feet of new gravity sewer and associated valves and flow meter.

B. Design and Construction

1. During the preliminary evaluation and preliminary design for this diversion project, several improvements were determined to be required to implement the diversion and operate the San Ramon Pumping Station in a reduced-flow mode. These improvements included the replacement of a small variable speed pump to operate a lower flow regime in the pumping station, and for the diversion box, motor-operated gates, high level alarm, and flowmeter as well as connection to the pumping station's control and SCADA system. However, due to the short term nature of this Agreement, these facility modifications would be more appropriate for a long-term agreement and will not be made as a result of this Agreement. In the event operational difficulties arise due to the initial configuration, the Parties will meet and confer to discuss any required modifications to mitigate the operational difficulties.
2. The Parties agree to work cooperatively and diligently to complete the Project design and construction.
3. DERWA shall lead the design of the Project and confirm the required Project facilities and facility modifications with review and input from Central San.
4. The Project shall be designed and constructed, under DERWA's lead, to minimize impacts to Central San's wastewater collection and treatment systems, and San Ramon Pumping Station.
5. Central San shall provide available information, including sewer flows, controls scheme for the San Ramon Pumping Station, record drawings of the San Ramon Pumping Station and collection system, and other available information as requested.
6. If required pursuant to Section IV.B.1 above, the design and construction of any required modifications to the San Ramon Pumping Station (i.e.; replacing a small capacity pump and replacing the control system programming for the wet well controls) will be led by Central San and reimbursed by DERWA.
7. DERWA will be responsible for all permits and acquiring any rights-of-way, easements, or licenses required to construct the Project.

C. California Environmental Quality Act

1. DERWA will be the lead agency responsible for Project compliance with the California Environmental Quality Act (CEQA) in cooperation with Central San as a responsible agency.
2. The Parties agree to work cooperatively to ensure Project compliance with CEQA.

D. New Facility Ownership

1. Upon completion and acceptance of the Project's construction, Central San shall own the vault and all the facilities within it. DSRSD shall own the new pipeline. Central San may only divert wastewater into the DSRSD pipeline as a part of this Agreement or the existing overflow agreement between Central San and DSRSD.
2. At the completion of this agreement, the constructed facilities will be owned by the agencies as described above. Each agency will have the discretion to decide whether to leave the facilities in place or to demolish them.

V. WASTEWATER DIVERSION PROJECT OPERATIONS***A. Diversion Operations***

1. The Project will be operated to minimize operational impacts to Central San's collection and wastewater treatment systems. DERWA will cooperate with Central San in order to minimize potential impacts.
2. When DERWA requires additional supplies pursuant to and during the term of this Agreement, DERWA will request that DSRSD divert wastewater flows from the Central San collection system to the DSRSD collection system for conveyance to the DSRSD Regional Wastewater Treatment Plant for secondary and tertiary treatment on behalf of DERWA.
3. In order for Central San to maintain a stable operation, the wastewater diversion shall not be intermittent. DERWA will provide advance notice, as defined below, of the need to begin diverting from Central San's collection system to meet its peak summer irrigation demand. When DERWA no longer requires use of Central San wastewater flows pursuant to this Agreement to meet its peak summer irrigation demand, DERWA will provide advance notice, as defined below, of the need to stop the diversion from Central San's collection system.
4. If there are negative operational impacts caused by DERWA's diversion of wastewater that cannot be mitigated, Central San retains the right to stop the diversion of wastewater to DERWA immediately and shall notify DERWA by telephone as soon as reasonably possible that the diversion has been stopped, and within five (5) business days provide DERWA with written notice describing the nature of the negative operational impacts upon which cessation of diversion is based. Consistent with Section II of this Agreement, should Central San exercise this right to stop

diversions, the Parties shall meet and confer, or its joint technical committee shall meet, in order to determine what actions or changes in DERWA diversion operations are required, if any, to mitigate the negative operational impacts.

5. The diversion operation will be led and controlled by DERWA's designees. A Central San representative must be present during the opening and closing of the diversion valve/structures, unless emergency conditions or operational needs require DERWA to stop the diversion. At such time, DERWA would notify Central San within four (4) hours that the diversion has been suspended. Resuming diversions will be coordinated with all Parties, once the emergency condition or operational needs have been resolved.

B. Notification and Reporting

1. DERWA shall provide Central San forty-eight (48) hour advance notice of the start and end of the diversion "season" during the term of this Agreement. Notice shall be provided to the individual or individuals identified by Central San and in the manner agreed upon by the Parties.
2. Central San shall notify DERWA in advance of any changes in its operations that may affect the operation of the DERWA diversion or the amount of wastewater flow available for diversion.
3. Central San shall notify DERWA by telephone as soon as reasonably possible and not more than four (4) hours after the diversion has been suspended due to emergency conditions.

C. Wastewater Treatment

1. DERWA will be responsible for all treatment and use or disposal of the wastewater flow it diverts from Central San's Manhole 11.
2. Central San will have no responsibility for the conveyance, treatment or use of the wastewater diverted from its Manhole 11 into the DSRSD collection system.

D. Urgent or Emergency Matters

1. In the case of an urgent or emergency situation involving the Project, the Parties agree to communicate and work cooperatively in responding to prevent or mitigate the loss or impairment of life, health, property or essential public services.
2. Either Party may respond to and resolve any urgent or emergency situation that occurs with the Project. When emergency response assistance is required by either Party related to the Project, mutual assistance or aid may be requested in accordance with any applicable mutual aid or operations agreements.
3. The Parties shall create and maintain an emergency contact list, which shall include names, roles, and emergency contact information for emergency response personnel.

If an urgent or emergency condition exists, the responding Party shall attempt to reach their counterpart, by telephone as soon as reasonably possible.

4. No Party to this Agreement, or a third party under contract with a Party, shall be constrained in an urgent or emergency situation from expending funds or performing work on the Project in order to prevent or mitigate the loss or impairment of life, health, property or essential public services to its customers at its individual expense and in accordance with its policies and procedures. In such an event, the Party performing, or that has authorized, the work shall notify the other Party as soon as reasonably practical.

VI. GENERAL PROVISIONS

A. Guiding Principles

Central San's authorization to enter into this Agreement is conditioned upon the Agreement and the operations being consistent with the Guiding Principles adopted by Central San's Board on August 16, 2018, and set forth in Exhibit B and incorporated herein by this reference as if fully set forth.

Each term of this Agreement shall be construed in a manner which provides consistency with the terms listed in Exhibit B.

B. Termination

Either Party may terminate this Agreement by delivering to the other Party a written notice of intention to terminate no later than six (6) months prior to the proposed date of termination.

Notwithstanding the foregoing sentence and the provisions in this Agreement to stop diversions for operational impacts or emergencies, if during the term of the Agreement, Central San reasonably determines that the operation of the project is no longer consistent with the Guiding Principles set forth in Exhibit B, then Central San may terminate the Agreement or temporarily suspend DERWA diversion operations with no less than sixty (60) days written notice to DERWA. If diversion operations are suspended pursuant to this provision, DERWA and Central San shall meet in good faith to determine what modifications, if any, are necessary in order for operations to resume.

Notwithstanding anything in this Agreement to the contrary, in the event that Central San terminates this Agreement at any time earlier than the initial term of this Agreement, Central San and DERWA shall meet in good faith to determine the amount of reimbursement to DERWA for DERWA funded costs related to material improvements benefitting Central San facilities, including but not limited to valves and data collection equipment.

C. Amendment

No alteration, amendment, variation, or waiver of the terms of this Agreement shall be valid unless made in writing and signed by the duly authorized representative of the Parties.

D. Assignment and Successors

No Party will assign any right or interest in this Agreement, or any part thereof, without the express written consent of the other Party. This Agreement shall bind the successors of the Parties in the same manner as if they were expressly named.

E. Dispute Resolution

In the event of a dispute between the Parties over the meaning of this Agreement, the Parties will meet in good faith to attempt to resolve the matter. Should informal efforts fail to resolve a dispute, the Parties may agree to mediation or arbitration, or pursue other available legal remedies in the State of California and in Contra Costa County.

F. Compliance With Laws

Each Party will comply with all laws, ordinances, regulations and orders applicable to work it will perform under this Agreement. If performance or contemplated performance under this Agreement results in, or is more likely than not to result in either Parties' failure to comply with laws, ordinances, regulations and orders applicable to it, either Party may terminate the Agreement without incurring any penalty to the other party.

G. Indemnification

To the extent permitted by State law, each Party will indemnify, defend and hold all other Parties and their directors, officers, agents, and employees safe and harmless from any and all claims, suits, judgments, damages, penalties, costs, expenses, liabilities and losses (including without limitation, sums paid in settlement of claims, actual attorneys' fees, paralegal fees, consultant fees, engineering fees, expert fees and any other professional fees) that arise from or are related in any way to each Party's, directors, officers, agents, and employees negligent acts, errors or omissions, or willful misconduct, in the performance of this Agreement.

This indemnification obligation is separate and cumulative to the obligations of DERWA set forth in Exhibit B and incorporated by reference herein, and more specifically those obligations addressed in Guiding Principles 1 (Subsections 1 and 4) and 7.

H. Notice

All notices required to be given, or which may be given by either Party to the other, will be deemed to have been fully given and fully received: (A) immediately upon personal delivery; (B) three days after the notice is deposited in the United States mail, registered and postage prepaid and addressed to the Party for whom intended; or (C) on the same

day as electronic transmission is sent as long as the transmitting Party receives confirmation of the transmission's delivery.

DERWA: Michael Tognolini, Authority Manager
DSRSD/EBMUD Recycled Water Authority
7051 Dublin Boulevard
Dublin, CA 94568
(510) 287-0125
michael.tognolini@ebmud.com

Central San: Roger S. Bailey, General Manager
Central Contra Costa Sanitary District
5019 Imhoff Place
Martinez, CA 94553
(925) 229-7300
rbailey@centralsan.org

Notification of a change in the name or information for the contact person will be in writing.

I. Signatures

The individuals executing this Agreement represent and warrant that they have the legal capacity and authority to do so on behalf of their respective legal entities. This Agreement may be executed in counterpart which when taken together shall be considered one and the same agreement. Facsimile, including email, and electronic signatures shall be binding.

J. Severability

If any term or provision of this Agreement is deemed invalid or unenforceable by a court of competent jurisdiction or by operation of any applicable law, it will not affect the validity of any other provision, which will remain in full force and effect.

K. Governing Law and Venue

This Agreement is governed by and will be interpreted in accordance with the laws of the State of California. Venue shall be in the Superior Court of the County of Alameda.

L. No Third Party Beneficiaries

No third-party beneficiaries are intended or created by this Agreement.

M. Complete Agreement

This Agreement represents the entire agreement between the Parties relating to the subject matter hereof.

VII. ANNUAL REPORTING

On an annual basis, DERWA shall prepare and provide an annual report to Central San, which provides an update on the project's compliance with the Guiding Principles, in addition to an update on DERWA's efforts to develop alternative supplies to offset its reliance on Central San's wastewater supply. The first report shall be due one year from execution of this agreement.

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the day and year first above written.

**DUBLIN SAN RAMON SERVICES DISTRICT – EAST BAY MUNICIPAL UTILITY
DISTRICT RECYCLED WATER AUTHORITY**

By:


Date:


Michael T. Tognolini

Title:

Authority Manager


Approved as to form:


Douglas E. Coty
DERWA Counsel

CENTRAL CONTRA COSTA SANITARY DISTRICT

By:

Date:


Roger S. Bailey

01-23-2019

Title:

General Manager

Approved as to form:



Kenton L. Alm
District Counsel

Exhibit A – Wastewater Diversion Project Location Map

Exhibit B – Central San's Guiding Principles

WASTEWATER DIVERSION PROJECT LOCATION MAP



*Please note that this is a conceptual layout of the Project. A more detailed design will be completed by DERWA and agreed to by the Parties prior to construction.

EXHIBIT B**CENTRAL SAN'S GUIDING PRINCIPLES**

These are the principles that were adopted by the Board on August 16, 2018, and agreed to set forth the general terms under which the District would enter into this agreement:

A. Guiding Principle 1: No Adverse Financial Impact to Central San

1. The temporary wastewater diversion shall not result in any additional operational cost to Central San. Therefore, any additional operational cost shall be fully reimbursed by DERWA.
2. Revenues, including sewer service charges, Ad Valorem taxes, and capacity fees, will not be shared to the extent they are used to recover 100% of Central San's systemwide fixed cost.
3. Variable costs will be assessed and revenues collected by Central San to cover these costs may be shared.
4. Any fines resulting from sanitary sewer overflows from Central San's collection system that are found to be caused by the temporary wastewater diversion shall be reimbursed by DERWA.

B. Guiding Principle 2: No Adverse Financial Impact to the Cities of Concord and Clayton

Central San provides wastewater treatment by contract for the cities of Concord and Clayton. Payment for this service is based on the flow ratio into Central San's wastewater treatment plant. The City of Concord is billed (on behalf of both cities) for its flow-proportional share of the O&M and capital costs associated with Central San's wastewater treatment plant and Recycled Water Program. As a result, any diversion of wastewater from Central San's collection system, upstream of the treatment plant, would cause an increase in Concord and Clayton's proportional share, if not adjusted. Therefore, it is critical to have accurate and timely information on how much wastewater DERWA diverts from Central San, so that the City of Concord's bill can be adjusted accordingly. DERWA shall be responsible for the cost to install and regularly calibrate an appropriate flow meter to accurately measure the amount of Central San's wastewater flow diverted.

C. Guiding Principle 3: Consistency with Central San's Municipal Bond Covenants

Central San has recently issued and is in the process of issuing additional municipal bonds to move forward with the implementation of large capital projects that exceed Central San's available annual capital budget. As such, the underlying assumptions for this bond issuance must remain consistent, as follows:

1. Central San will not de-annex any portion of its service area for the sake of implementing this temporary diversion.
2. Central San will not share any revenues associated with the area served by the San Ramon Pumping Station, to the extent those revenues are used to cover Central San's systemwide fixed costs.

D. Guiding Principle 4: Consistency with Proposition 218

There are concerns that the collection of revenues to cover the transportation and treatment of wastewater, from the affected customers within the diversion area, may be at risk for a Proposition 218 challenge, to the extent that those customers do not benefit from Central San's downstream conveyance and treatment facilities and their associated cost during the diversion. As a result, any Proposition 218 challenge that arises as a result of this temporary diversion will be grounds for termination of this agreement.

E. Guiding Principle 5: Community Acceptance

Community acceptance is essential for the successful implementation of this temporary diversion project. This includes acceptance by the following entities:

- Central San customers
- Cities of Concord and Clayton
- The adjoining San Ramon Pumping Station neighborhood
- City of San Ramon
- San Ramon Valley Unified School District
- East Bay Regional Park District

F. Guiding Principle 6: Temporary Nature of the Project

Central San has entered into a Memorandum of Understanding (MOU) with Contra Costa Water District and Santa Clara Valley Water District regarding a recycled water exchange project. To the extent this is proven viable, Central San may need this wastewater supply to meet this and other existing recycled water commitments, so Central San retains the right to the requested wastewater flow and may call on it whenever needed. As such, this wastewater diversion is temporary in nature.

G. Guiding Principle 7: Mitigation of Technical and Operational Impacts

1. There shall be no damage to Central San's infrastructure during the diversion. If damage is discovered, Central San will cease the diversion until the issue is corrected.
2. Central San must maintain a minimum amount of wastewater flow in its collection system to prevent solids from settling in the collection system. If low flows from the temporary diversion cause solids settling or odor issues, Central San will enlist its collection system crews to flush the collection system and DERWA shall be responsible for reimbursing Central San for the cost.

3. DERWA shall be responsible for the cost to mitigate any increased odor or any overflows from Central San's San Ramon Pumping Station and downstream collection system that result from the diversion.

H. Guiding Principle 8: Benefit to Central San Customers

The wastewater temporarily diverted from Central San's service area shall be available to Central San's service area as recycled water.

I. Guiding Principle 9: Facilitate a Sustainable Solution for the Region's Water Supply Shortage

1. Central San understands the water supply concerns/need within the Bay Area. Central San will work with agencies/stakeholders within the region to facilitate the most optimal solution to collect and treat wastewater within its service area and to distribute such treated effluent for the benefit of its customer base and the greater region.
2. There are several Central San recycled water projects, which, collectively, may achieve this overarching goal:
 - Central San's Zone 1 Recycled Water Project (existing) within CCWD's service area
 - Concord Community Reuse Project (Central San to produce and wholesale tertiary-treated recycled water to CCWD for this development's needs)
 - Diablo Country Club Satellite Water Recycling Facility in EBMUD's service area
 - Refinery Recycled Water Exchange Project
3. The Exchange Project represents the potential for the most optimal regional solution.

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ITEM NO. 11 UPDATE AND RESPONSE TO VARIOUS LEGAL AND LEGISLATIVE ISSUES

Action Requested

None at this time.

Summary

California Association of Sanitation Agencies (CASA) has not yet developed a list of legislation that it is tracking on behalf of its members. California Special Districts Association (CSDA) is tracking many bills. Some of the bills that may be of interest to LAVWMA member agencies include the following:

AB 129 (Bloom) Waste management: plastic microfiber.

Current Text: Introduced: 12/4/2018 [html](#) [pdf](#)

Introduced: 12/4/2018

Status: 1/7/2019-Read first time.

Location: 12/4/2018-A PRINT

Summary: Would declare the intent of the Legislature to, among other things, enact legislation to recognize the emerging threat that microfibers pose to the environment and water quality and would make related findings and declarations.

AB 134 (Bloom) Safe, clean, affordable, and accessible drinking water.

Current Text: Introduced: 12/5/2018 [html](#) [pdf](#)

Introduced: 12/5/2018

Status: 1/7/2019-Read first time.

Location: 12/5/2018-A. PRINT

Summary: Would state findings and declarations relating to the intent of the Legislature to adopt policies to ensure that every Californian has the right to safe, clean, affordable, and accessible drinking water.

AB 223 (Stone, Mark) California Safe Drinking Water Act: microplastics.

Current Text: Introduced: 1/16/2019 [html](#) [pdf](#)

Introduced: 1/16/2019

Status: 2/4/2019-Referred to Com. on E.S. & T.M.

Location: 2/4/2019-A.E.S. & T.M.

Summary: The California Safe Drinking Water Act requires the State Water Resources Control Board to administer provisions relating to the regulation of drinking water to protect public health. Current law requires the state board, on or before July 1, 2020, to adopt a definition of microplastics in drinking water and, on or before July 1, 2021, to adopt a standard methodology to be used in the testing of drinking water for

microplastics and requirements for 4 years of testing and reporting of microplastics in drinking water, including public disclosure of those results. This bill would require the state board, to the extent possible, and where feasible and cost effective, to work with the State Department of Public Health in complying with those requirements.

AB 231 (Mathis) California Environmental Quality Act: exemption: recycled water.

Current Text: Introduced: 1/17/2019 [html](#) [pdf](#)

Introduced: 1/17/2019

Status: 2/7/2019-Referred to Com. on NAT. RES.

Location: 2/7/2019-A. NAT. RES.

Summary: Would exempt from CEQA a project to construct or expand a recycled water pipeline for the purpose of mitigating drought conditions for which a state of emergency was proclaimed by the Governor if the project meets specified criteria. Because a lead agency would be required to determine if a project qualifies for this exemption, this bill would impose a state-mandated local program. The bill would also exempt from CEQA the development and approval of building standards by state agencies for recycled water systems.

AB 292 (Quirk) Recycled water: raw water and groundwater augmentation.

Current Text: Introduced: 1/28/2019 [html](#) [pdf](#)

Introduced: 1/28/2019

Status: 2/7/2019-Referred to Coms. on E.S. & T.M. and W., P., & W.

Location: 2/7/2019-A. E.S. & T.M.

Summary: Current law requires the State Water Resources Control Board, on or before December 31, 2023, to adopt uniform water recycling criteria for direct potable reuse through raw water augmentation, as specified. This bill would eliminate the definition of “direct potable reuse” and instead would substitute the term “groundwater augmentation” for “indirect potable reuse for groundwater recharge” in these definitions. The bill would require, on or before December 31, 2023, the state board to adopt uniform water recycling criteria for raw water augmentation.

AB 405 (Rubio, Blanca) Sales and use taxes: exemption: water treatment.

Current Text: Introduced: 2/7/2019 [html](#) [pdf](#)

Introduced: 2/7/2019

Status: 2/15/2019-Referred to Com. on REV. & TAX.

Location: 2/15/2019-A. REV. & TAX

Summary: Would exempt from Sales and Use Tax the gross receipts from the sale in this state of, and the storage, use, or other consumption in this state of, chemicals used to treat water, recycled water, or wastewater regardless of whether those chemicals or other

agents become a component part thereof and regardless of whether the treatment takes place before or after the delivery to consumers.

SB 166 (Wiener) Process water treatment systems: breweries and wineries: water quality criteria.

Current Text: Introduced: 1/28/2019 [html](#) [pdf](#)

Introduced: 1/28/2019

Status: 2/12/2019-Set for hearing March 20.

Location: 2/6/2019-S. E.Q.

Summary: Would require the State Water Resources Control Board, on or before December 1, 2025, in consultation with the State Department of Public Health – Food and Drug Branch, to adopt regulations for microbiological, chemical, and physical water quality and treatment requirements for the onsite treatment and reuse of process water in breweries and wineries. The bill would require a process water treatment system in a brewery or winery to comply with the regulations within 2 years of the effective date of the regulations. The bill would require an entity that implements a process water treatment system in a brewery or winery to submit a report containing specified information to the department, as provided, and to terminate the operation of, and modify to render inoperable, any process water treatment system in a brewery and winery at the direction of the state board.

SB 200 (Monning) Safe and Affordable Drinking Water Fund. Note: This is the “water tax” bill.

Current Text: Introduced: 1/31/2019 [html](#) [pdf](#)

Introduced: 1/31/2019

Status: 2/13/2019-Referred to Coms. on EQ. and N.R. & W.

Location: 2/13/2019-S. E.Q.

Summary: Would establish the Safe and Affordable Drinking Water Fund in the State Treasury and would provide that moneys in the fund are available, upon appropriation by the Legislature, to the State Water Resources Control Board to provide a stable source of funding to secure access to safe drinking water for all Californians, while also ensuring the long-term sustainability of drinking water service and infrastructure.

Recommendation

There is no recommendation at this time.

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ITEM NO. 12 GENERAL MANAGER'S REPORT

Action Requested

None at this time. This is an information item only.

Summary

The General Manager's (GM) tenure began on April 17, 2014. A two year extension was approved on April 20, 2016, and a three year extension was approved on February 21, 2018. The agreement requires a report on hours worked during the fiscal year at each Board meeting. There is a limitation of 1,000 hours per fiscal year. For the fiscal year ending June 30, 2019 the General Manager has billed LAVWMA approximately 280 hours.

In addition to the brief descriptions below, there are several items of interest for the Board's review:

1. **Pump Purchase and Lessons Learned.** Despite project delays, all three pumps have been delivered and are now operating successfully. Refer to the Quarterly Report of Operations for information on the improvement in pump efficiency and reduction in energy use.

After significant discussion and analysis, the General Manager and General Counsel prepared a December 17, 2018 letter, Final Payment for December 5, 2016 Agreement for Equipment and Services and a Mutual Waiver and Release of Claims and sent it to the contractor, MuniQuip. The final contract price for the three pumps, including change orders was \$227,115.33. Liquidated damages for delay were assessed for \$50,000, resulting in a final payment of \$177,115.33. This was consistent with Board direction. A copy of the signed letter and waiver are attached as **Item 12.A** for the Board's information. MuniQuip's invoice has been approved, payment has been made, and this project is now complete. The warranty period for the three pumps began on November 14, 2018. It should also be noted that LAVWMA made no payments to MuniQuip prior to the final payment.

The large majority of LAVMWA projects are managed by DSRSD. This project was different due to the formal bidding process for the three pumps. The bid packet, including specifications and the agreement were prepared by LAVWMA's consultant. The language in the agreement was standard and has been used for similar purchases in the past. The contact person listed in the agreement was a member of DSRSD's staff and the agreement was between LAVWMA and MuniQuip, with American Marsh Pumps as the pump manufacturer. The General Manager was not actively involved in the project until

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it became apparent that the contractor was not going to meet the September 30, 2017 deadline for completion of the project.

Typically, LAVWMA agreements are reviewed and approved by the General Counsel. That was not the case with the pump purchase agreement. A better form of agreement would have put LAVWMA in a stronger position for dealing with some of the difficulties that arose. Ensuring that all agreements are reviewed and approved as to form by the Agency's General Counsel at the outset is an advisable protocol, and one required by most public agencies. The JPA agreement is silent on agreement protocols, but LAVWMA could either amend an existing purchasing policy or include this in a new purchasing policy if it does not. This issue still needs to be reviewed.

One of the major defects of the agreement that was used is that it technically expired before the work was completed. The mutual waiver ensures this is no longer a problem. Public works agreements generally specify when the work must be completed, but also provide that the agreement remains in full force and effect until the work has been accepted and final payment tendered.

Often public works agreements will limit the percentage of work that can be performed by subcontractors in order to avoid situations where the lion's share of the work is performed by subcontractors with whom the agency has no direct contract, and therefore no legal leverage. That approach might not have worked for the MuniQuip procurement but may be worth considering for future public works contracts.

In addition to imposing liquidated damages for delay in final completion of the project as a whole, milestones can be used to assess interim liquidated damages for key progress points on the critical path. For example, for this agreement, milestones could have been set for completion of fabrication, shipping (receipt), installation, and full functioning for each pump.

These lessons learned regarding internal legal review, contract expiration, subcontractor limitations and completion milestones will be incorporated into the working knowledge of Agency personnel (and potentially written policies) and will be used to facilitate a better foundation for future public contracting efforts.

2. **Asset Management.** DSRSD staff continues to refine the equipment listing. Attached are draft listings for Mechanical Equipment, **Item 12.B**, and Electrical Equipment, **Item 12.C**. The concept behind these listings is all items that are scheduled for replacement or rebuild are listed for a given year. This will allow proper budget planning to ensure adequate funds are available in the replacement funds. Operations and Maintenance staff

are consulted such that each item is properly evaluated to ensure it is rebuild or replaced at the proper time.

3. **Records Management Project and Transfer of Files from Burke, Williams, & Sorenson.** LAVWMA received 31 boxes of files from General Counsel Alexandra Barnhill's former law firm. Sue Montague has completed an inventory of the documents and duplicate items have been tossed. Sue Montague and the General Manager met with the records management consultant on October 26, 2018 to discuss the additional records. We also discussed digitizing as many records as possible to save on storage space and provide long term protection. The current original cost estimate for the project was \$22,461. The revised cost estimate is for \$25,036. This project is also subject to the time frame to restore DSRSD's offices for normal use. There was no water damage to LAVWMA's records during the flooding of the building as the records were either above the water line or in a building that was not flooded.

4. **Nutrients Watershed Permit**

Bay Area Clean Water Agencies (BACWA) and the Regional Board continue to work on issues for the renewal of the permit in 2019. The Water Board will likely include goals for load caps for Nitrogen with actual caps in 2024. The EBDA General Manager has prepared a PowerPoint presentation to outline the process and likely terms of the permit. A copy of the presentation is included as **Item No. 12.D**.

5. **EBDA Issues**

The EBDA agencies continue to discuss modifications to their JPA. Significant progress has been made since the last report. They have agreed on O&M and Renewal & Replacement Fund (RRF) Cost allocations:

1. Fixed costs based on defined capacity selected by each agency. All are reducing their capacities except Union Sanitary District.
2. Variable costs based on total annual flow.
3. RRF Pump station costs allocated based on defined capacity.
4. RRF pipeline costs allocated based on actual use. Liability for major repairs is still under discussion.

Issues still to be resolved are penalties for capacity exceedances and a restructured voting process to eliminate the veto power for most issues. They are also looking at a 20-year extension of the revised agreement.

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LAVWMA's agreement with EBDA coincides with their JPA and terminates January 1, 2020. EBDA agencies reducing their capacity has the potential to increase LAVWMA's fixed costs. The SAG continues to discuss how best to address this.

6. Wet Weather Issues

There have been significant precipitation events in February. Please refer to **Item No. 12.E**. Despite the high flows, the pump station has performed well and there have been no issues.

Following is a brief description of major activities since the August 15, 2018 Board meeting:

- Attended LAVWMA O&M meetings with DSRSD, Livermore and Pleasanton staff.
- Prepared and distributed agenda packet for the February Staff Advisory Group meeting. Attended February 7, 2019 SAG meeting.
- Drafted items for February 20, 2019 Board Agenda and prepared packet for distribution.
- Drafted minutes from November 21, 2018 Board meeting and revised based on comments received.
- Made updates to website as needed for files and legal requirements.
- Continued to work with General Counsel to track legislation of interest to LAVWMA and the member agencies.
- Monitored progress of pump station projects managed by DSRSD staff. This included the purchase of new pumps as well as projects described in the attached Action Item List. Obtained MuniQuip signature on mutual waiver and tracked invoice payment.
- Worked with General Counsel to document lessons learned from MuniQuip pump purchase project.
- Reviewed and approved invoices for payment by DSRSD.
- Worked with Sue Montague to find a temporary permanent location for the Board meeting due to flooding of the DSRSD Board Room.
- Continued to Discuss Asset Management issues with DSRSD staff. LAVWMA will follow their lead. Please refer to the more detailed discussion above.
- Worked with DSRSD staff on various inquiries regarding projects near the forcemain to ensure there would be no issues of concern with the integrity of the forcemain.
- Attended EBDA Managers Advisory Committee (MAC) meetings.
- Attended EBDA JPA workshops. Reviewed and provided comments on PowerPoint to EBDA General Manager.
- Participated in EBDA Manager's email discussions regarding JPA revision issues, including cost allocation issues.
- Worked with General Counsel and DSRSD staff on the DSRSD/Central San diversion issue.
- Reviewed and commented on revised template for consultant services agreement.
- Updated template for public works contracts from General Counsel

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- Prepared and submitted monthly invoices for LAVWMA General Management services.
- Continued to track progress of the Regional Water Board's Nutrient Watershed Permit renewal. Provided comments to EBDA General Manager on draft PowerPoint. Requested projected effluent limit and contributions by each EBDA/LAVWMA participant.
- Attended CASA Winter Conference.
- Receiver Form 700 information regarding Form 700s and forwarded same to Sue Montague.
- Reviewed various financial reports prepared by DSRSD staff.
- Received and reviewed Livermore and DSRSD 2018 metals data for calculating Regional Monitoring Program costs.
- Logged into Samsara website at various times to monitor pump station and flows.
- Reviewed and approved DSRSD monthly invoices for O&M services.
- Continued working with EBDA and LAVWMA agency staff to address enterococcus issues.
- Reviewed EBDA and DSRSD agenda packets.
- Participated as a "coach" for one of DSRSD's engineering staff.
- Reviewed various O&M projects conducted by DSRSD staff on behalf of LAVWMA.
- Responded to various emails and phone calls from outside agencies and organizations.

Attached for the Board's information, as **Item No. 14.F**, is the most recent Action Item List.

Next Meeting

The next Regular Board meeting is scheduled for May 15, 2019.

Recommendation

None at this time. This is an information item only.



Livermore-Amador Valley
Water Management Agency

December 17, 2018

David F. Giersch, President
MuniQuip, LLC
2024 Opportunity Drive, Suite 130
Roseville, CA 95678

Re: Final Payment for December 5, 2016 Agreement for Equipment and Services

Dear Mr. Giersch:

This letter pertains to final payment for the December 5, 2016 Agreement for Equipment and Services ("Agreement") between Livermore-Amador Valley Water Management Agency ("LAVWMA") and MuniQuip, LLC ("MuniQuip") for the purchase of three vertical turbine pumps and related services (the "Project").

Contractual Requirements:

There have been a number of well-documented delays in this Project—delays in delivery of the pumps and additional delays before each pump was fully and properly operational. Subsection 1.07B.2 of Specification Section 01110, Summary of Work, provides in part:

"The Contractor shall furnish and deliver equipment and related items by **June 1, 2017**. (**"Equipment Delivery Deadline"**). Liquidated damages may be assessed for Contractor's failure to meet the Equipment Delivery Deadline." (Emphasis added.)

Section 7 of the executed Agreement, Delay and Termination by Owner, provides in part:

"If Contractor fails to deliver the Equipment to Owner as required by this Agreement by the Equipment Delivery Date [sic: Deadline], Contractor will be subject to the [sic] liquidated damages of \$500 per calendar day."

Delayed Delivery:

The pumps were not delivered within the times required under the Agreement, nor within the revised delivery deadlines set forth in Contract Change Order Number LAVWMA 2016-02-01, which extended delivery dates for the pumps, but expressly reserved LAVWMA's right to assess liquidated damages for delay and any other remedies for non-conforming work. The first two pumps were not delivered until December 11, 2017 (193 days after the Equipment Delivery Deadline), and the third pump was not delivered until March 6, 2018 (**278** days after the Equipment Delivery Deadline). Per Section 7 of the Agreement, excerpted above, LAVWMA is

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entitled to assess up to **\$139,000.00** in liquidated damages (\$500 x 278 days) based on the failure to deliver all three pumps by the June 1, 2017 Equipment Delivery Deadline.

Performance Deficiencies:

Separate and apart from the delivery delays which are subject to liquidated damages, LAVWMA incurred additional damages due to the performance deficiencies and delays. As more fully documented in the Project Summary History attached as Exhibit A to Contract Change Order Number LAVWMA 2016-02-02 ("Change Order No. 2"), there were multiple and compounded problems with design and manufacture, including repeated failures to comply with the specifications. This included documented failure to meet the specified performance criteria, which has a direct impact on LAVWMA's operational costs. In addition, the first two pumps were not operational for months due to seal failures. The first two pumps were not fully operational until September 5, 2018, and the third and final pump was not fully operational until October 31, 2018 (more than one year after the Agreement termination date of September 30, 2017).

These problems were largely due to the poor performance of MuniQuip's supplier, American Marsh Pumps. Our estimate of the total additional costs incurred by LAVWMA due to the many performance deficiencies is over \$90,000.00. While LAVWMA appreciates the efforts made by MuniQuip to deal with its supplier, it remains the case that MuniQuip, and not LAVWMA, is responsible for the delayed and deficient performance by MuniQuip's supplier.

Damages and Final Payment:

To date, LAVWMA has not made any payments to MuniQuip as there have been no requests for payment pursuant to subsection 5(e) of the Agreement. Section 5 of the Agreement, Compensation and Payment, provides that the total compensation payable to MuniQuip for the required equipment and services is \$221,631.33. LAVWMA agreed, under protest since the cause of the original seal failure was never fully determined, to increase the Agreement price by \$5,484.00 through Change Order No. 2. If we include the additional \$5,484.00, the total payable to MuniQuip—before subtracting liquidated damages for delayed delivery and additional damages for defective performance—is \$227,115.33.

Notwithstanding the extended delay and performance deficiencies, it is not in either party's interest for LAVWMA to assess penalties that would cause harm to the good working relationship between LAVWMA and MuniQuip that has been developed over the course of this Project, despite the performance issues with American Marsh Pumps. Therefore, notwithstanding the total liquidated damages of \$139,000.00 for delayed delivery, and actual damages in excess of \$90,000.00 for the additional performance deficiencies, LAVWMA proposes to cap its total damage recovery at a flat \$50,000.00, which would result in a final payment amount of **\$177,115.33** (\$227,115.33 - \$50,000.00).

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Warranty:

Fortunately, all three pumps are now operating as designed. Based on our prior discussion, allowing for a two-week start-up period for the third pump results in a completion date of November 14, 2018, and the Project will be deemed accepted as of that date. From LAVWMA's perspective the one-year warranty period, specified in subsection 4(1) of the Agreement, should begin on November 14, 2018.

Mutual Waiver and Release of Claims:

In order to provide assurance to both MuniQuip and LAVWMA that all matters in dispute will be fully and finally resolved pursuant to the terms set forth in this letter, I am attaching a standard Mutual Waiver and Release of Claims ("Release"), prepared by our General Counsel to formalize the terms for closing out this Project. Please review carefully and let me know if you have any questions in this regard.

If the terms of the Release are acceptable, please execute the Release as indicated on page 5, and return it to me at your earliest convenience. Upon receipt, I will execute the Release on behalf of LAVWMA and enter the date of my execution as the Effective Date in the first paragraph of the Release. I will immediately initiate final payment in the amount of \$177,115.33. As indicated in Section 3 of the Release, this amount will be due and payable to MuniQuip within 14 days following the Effective Date. However, as a gesture of good will, I will do my best to get this processed as quickly as possible, notwithstanding the holidays.

Summary:

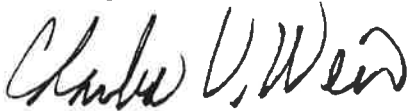
In sum, LAVWMA proposes the following conditions to close out this Project and resolve all issues pertaining to performance of the Agreement:

1. The one-year warranty period for the three pumps will begin on November 14, 2018 and the Project will be deemed accepted as of that date.
2. LAVWMA and MuniQuip will execute the Release to resolve all past performance issues pertaining to the Agreement with finality for both parties.
3. Upon execution of the Release, LAVWMA will pay MuniQuip \$177,115.33, as full and final payment.

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If these conditions are acceptable to MuniQuip, please review and execute the Release in blue ink, and return it to my attention. Please let me know if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles V. Weir". The signature is fluid and cursive, with the first name "Charles" and last name "Weir" clearly distinguishable.

Charles V. Weir
General Manager

Enclosure: Mutual Waiver and Release of All Claims

MUTUAL WAIVER AND RELEASE OF CLAIMS

This Mutual Waiver and Release of Claims ("**Release**"), effective December 20, 2018 ("**Effective Date**"), is entered into by and between the Livermore-Amador Valley Water Management Agency ("**LAVWMA**") and MuniQuip, LLC ("**MuniQuip**"), referred to collectively as the "**Parties**," and individually as a "**Party**."

RECITALS

- A. On or about December 5, 2016, following public bidding, LAVWMA entered into an Agreement for Equipment and Services ("**Agreement**") with MuniQuip, which is fully incorporated herein by this reference, for the purchase of three vertical turbine pumps and related services (the "**Project**").
- B. The total compensation payable to MuniQuip under the Agreement was \$221,631.33.
- C. The Agreement contemplated that the Project would be fully completed by September 30, 2017. The third and final pump was not installed and operational until October 31, 2018, and the Project was accepted as complete by LAVWMA, effective November 14, 2018. The Parties dispute responsibility for the Project delays and for the costs incurred by LAVWMA because of those delays (the "**Dispute**").
- D. Parties wish to resolve the Dispute and to settle all current and potential claims pertaining to the Agreement as set forth in this Release.

TERMS AND CONDITIONS

NOW, THEREFORE, for value received and in consideration of the covenants and conditions set forth below, the Parties agree as follows:

1. Recitals.

The Parties agree that the facts stated above are true and correct. The above recitals are incorporated herein and made part of this Release.

2. Release and Settlement.

The Parties intend that this Release be enforceable to fully and finally resolve the Dispute and mutually waive and release any present or future claims pertaining to performance of the Agreement (collectively, "**Claims**"), as of the Effective Date set forth above.

3. Damages and Final Payment.

LAVWMA hereby withdraws its protest to payment of an additional \$5,484.00 pursuant to Contract Change Order Number LAVWMA 2016-02-02, and agrees that the total payable under the Agreement, subject to offset for LAVWMA's damages, is \$227,115.33. LAVWMA agrees that notwithstanding any and all remedies it may have under the Agreement, including assessment of liquidated damages for delay, it will accept \$50,000.00 as full and final satisfaction for all Claims it may have against MuniQuip. MuniQuip hereby agrees that the amount otherwise due as final payment under the Agreement will be reduced by \$50,000.00 as full and final compensation to LAVWMA for any Claims it may have against MuniQuip. Accordingly, within 14 days of the Effective Date of this Release, LAVWMA will pay MuniQuip \$177,115.33, as full and final compensation to MuniQuip for all equipment, materials, supplies, and services provided under the Agreement, fully inclusive of all costs.

4. Warranty

The Parties hereby agree that the one-year warranty obligation set forth in subsection 4(l) of the Agreement, remains in full force and effect, commencing on November 14, 2018 as to all three pumps.

5. Mutual Release of Claims.

Subject to mutual compliance with the terms and conditions set forth in this Release, each Party hereby fully and finally releases and forever discharges the other Party and its past, present and future governing board, directors, owners, officers, officials, employees, sureties, subcontractors, consultants, representatives, attorneys, insurers, successors and assigns, from any and all Claims, including demands, actions, causes of action, rights, remedies penalties, liens, stop notices, obligations, fees, costs, interest, expenses, damages, attorney fees, expert and consultant fees, losses and liabilities, of any kind or nature, whenever or however derived, known or unknown, foreseen or unforeseen, suspected or unsuspected, past, present or future, arising out of or relating in any way to the Agreement, subject to the following exceptions: This mutual release does not extend to MuniQuip's warranty obligations, as referenced in Section 4, above, nor to any cause of action that LAVWMA may have for any latent defect in the pumps that is discovered after the one-year warranty period has expired.

6. Waiver of Civil Code Section 1542.

Subject to the exceptions set forth in the final sentence of Section 5, above, the Parties expressly agree to a general release of all Claims relating to or arising from the Agreement and in that regard, expressly agrees to waive the terms of Civil Code section 1542, which provides as follows:

"A general release does not extend to claims which the creditor does not know or suspect to exist in his or her favor at the time of executing the release, which

if known by him or her must have materially affected his or her settlement with the debtor.”

7. No Admission of Liability.

This Release is made without admission of liability by either Party. This Release is inadmissible in any legal proceeding as evidence of liability by either Party.

8. Covenant Not To Sue.

Provided all terms and conditions stated herein are fully satisfied, the Parties covenant and agree not to make, assert, maintain, or in any way cause to be made, asserted or maintained, any claim, demand, action, cause of action, suit or proceeding against any person or entity released herein for anything released herein. Each Party further warrants and represents that it has not assigned, conveyed, granted or otherwise transferred any rights or duties pertaining to the Claims. This Release may be pleaded as a full and complete defense to, and may be used as the basis for, any injunction against any action, suit or other proceeding that may be instituted or prosecuted in breach of this Release.

9. Representation by Counsel.

By signing below, each Party acknowledges that it has had the opportunity to be advised and represented by legal counsel of its own choice and has executed this Release after having been so advised or represented or after electing not to obtain the advice and representation of qualified legal counsel. Each Party further acknowledges that it and its counsel have had an adequate opportunity to make whatever investigation or inquiry it may deem necessary or desirable in connection with the subject matter of this Release. Each Party further acknowledges that, prior to execution of this Release, it has read, understood, and approved the language of this Release, with or without the assistance and advice from its legal counsel.

10. General Provisions.

a. Entire Agreement/Construction and Interpretation. This Release embodies the entire agreement and understanding between the Parties and supersedes all prior agreements and understandings relating to the Claims. No course of prior dealing between the Parties, no usage of the trade, and no parole or extrinsic evidence of any nature will be used or be relevant to supplement, explain, or modify any term used herein. Each Party expressly waives the provisions of Civil Code section 1654 and acknowledges and agrees that this Release will not be deemed prepared or drafted by one Party or the other and will be construed accordingly.

b. Severability. If a court of competent jurisdiction determines or finds that any part, term, portion or provision of this Release invalid, illegal or unenforceable, the remaining parts, terms, portions and provisions will be deemed severable and the validity, legality and

enforceability of the remaining parts, terms, portions and provisions will not be affected or impaired.

c. Modification Only in Writing. Neither this Release nor any of its provisions may be changed, waived, discharged, or terminated except by a written instrument duly authorized and signed by the Party against whom enforcement of the change, waiver, discharge, or termination is sought.

d. No Waiver. Except as limited by this Release, no failure to exercise and no delay in exercising any right, power, or remedy hereunder will operate to impair any right, power or remedy which any Party may have, nor will any such delay be construed to be a waiver of any such right, power, or remedy, or any acquiescence in any breach or default of this Release; nor will any waiver of any breach or default by either Party be deemed a waiver of any subsequently occurring default or breach. All rights and remedies granted to either Party under this Release will remain in full force and effect notwithstanding any single or partial exercise of, or any discontinuance of, any action begun to enforce any such right or remedy. The rights and remedies specified herein are cumulative and not exclusive of each other or of any rights or remedies which either Party would otherwise have. Any waiver, permit, consent or approval by either Party of any breach or default hereunder must be in writing and will be effective only to the extent stated in a writing signed by the Party to be charged and only as to that specific instance.

e. Non-Exclusive Remedies. In the event of a breach of any provision of this Release, each Party, in addition to and not in lieu of the remedies expressly provided in this Release, will be entitled to exercise such remedies that exist at law or equity to enforce this Release including, but not limited to, seeking specific performance.

f. Choice of Law and Venue. This Release will be construed in accordance with, and governed by, the procedural and substantive law of the State of California, and the venue of any litigation in connection with this Release will be in the Superior Court of California in the County of Alameda and no other place.

g. Attorney's Fees. Each Party will bear its own attorney fees and costs incurred up to and including the date of execution of this Release. If any legal action or proceeding is brought between either of the Parties arising out of, relating to or seeking the interpretation or enforcement of the terms of this Release, the prevailing party will be entitled to its reasonable attorney fees and costs, including attorney fees and costs for any arbitration, appeal, or enforcement of judgment.

h. Headings. Captions, section headings and numbers have been set forth in this Release for convenience only and are not to be used in construing this Release.

i. **Necessary Acts.** Each Party agrees to perform any further acts and execute and deliver any further documents that may be reasonably necessary to carry out the provisions of this Release.

j. **Authority to Execute and Bind.** Each Party represents and warrants that each of the persons executing this Release on its behalf has full and complete legal authority to do so and thereby binds the Party on behalf of whom this Release is executed.

k. **Counterparts.** This Release may be executed in any number of counterparts, all of which taken together will constitute one agreement. Executed copies of this Release may be transmitted electronically between the Parties and signatures on such electronically transmitted copies will be deemed original signatures.


IN WITNESS WHEREOF, the Parties have caused this Release to be executed as follows:

LAVWM.

By: 
Charles V. Weir, General Manager

Date: 12/20/2018

Approved as to form:

By: 
Clare M. Gibson, General Counsel

Date: 12/20/18


MUNIQUEP, LLC


By: 
(Authorized Signature)

Date: 12/19/2018


Print Name: David F. Giersch

Title: President


	LAVWMA	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
		Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
Hydraulic Structures																
L015+75VLT - Air Release Vault		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hydraulic Structures Subtotal:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LAVWMA DSRSD Pipeline																
Hydraulic Structures																
D023+00VLT - Air Release Vault (int Liv Vcsd Combined) L-3		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Hydraulic Structures Subtotal:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Valve																
D023+00BFV - Butterfly Valve (int Liv Vcsd Combined) L-3		\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
D023+00CAV - Combination Air Vacuum Valve For Dsrds Joint Use		\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200
Valve Subtotal:		\$0	\$1,100	\$1,100	\$200	\$0	\$200	\$300	\$0	\$300	\$0	\$0	\$0	\$200	\$0	\$200
Number of Assets:		0	1	1	1	0	1	2	0	2	0	0	0	1	0	1
LAVWMA DSRSD Pipeline Subtotal:		\$0	\$1,100	\$1,100	\$200	\$0	\$200	\$300	\$0	\$300	\$0	\$0	\$0	\$200	\$0	\$200
Number of Assets:		0	1	1	1	0	1	2	0	2	0	0	0	1	0	1
LAVWMA Export Pipeline																
Compressor																
180201ACO - Air Compressor 1, Surge Tank For Pipeline 2		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$60,100	\$60,100
180202ACO - Air Compressor 2, Surge Tank For Pipeline 2		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$60,100	\$60,100
Compressor Subtotal:		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$120,200	\$120,200
Number of Assets:		0	0	0	0	0	0	0	0	0	0	0	0	0	2	2

	LAVWMA			FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029			Item No. 12-B
				Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	
LAVWMA Export Pipeline																			
Electrical Equipment																			
PN021+50RTF - Rectifier P-1 (2000-03) C-102				\$0	\$200	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN025+00RTF - Rectifier P-2 (2000-03) C-217				\$0	\$0	\$0	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0	
PN168+75RTF - Rectifier P-3 (2000-03) C-114				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$200	\$200	\$0	
PN230+35RTF - Rectifier P-10 (2003-01) C-420				\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN271+00RTF - Rectifier P-4 (2000-03) C-205				\$0	\$0	\$0	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0	
PN334+25RTF - Rectifier P-5 (2000-03) C-211				\$0	\$0	\$0	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0	
PN483+50RTF - Rectifier P-6 (2000-02) C-308				\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN670+00RTF - Rectifier P-8 (2000-02) C-322				\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN783+00RTF - Rectifier P-9 (2000-02) C-331				\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PO053+50RTF - Rectifier P-7 (96-1) P-4				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	
Electrical Equipment Subtotal:				\$100	\$200	\$300	\$300	\$0	\$300	\$300	\$0	\$300	\$100	\$0	\$100	\$0	\$200	\$200	
Number of Assets:				1	1	2	3	0	3	3	0	3	1	0	1	0	1	1	
Hydraulic Structures																			
PN000+00VLT - Vault (2000-03) C-217/c-220				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN011+82VLT - Air Release Vault (2000-03) C-102				\$0	\$0	\$0	\$0	\$0	\$0	\$1,800	\$0	\$1,800	\$0	\$0	\$0	\$0	\$0	\$0	
PN018+40VLT - Air Release Vault (2000-03) C-102				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN025+40VLT - Dechlor Flow Meter Vault (2000-03) C-103/c-219				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN035+10MNH - Pressure Manhole (2000-03) C-103				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN041+89VLT - Air Release Vault (2000-03) C-104				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN049+80MNH - Pressure Manhole (2000-03) C-105				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN064+16MNH - Pressure Manhole (2000-03) C-106				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN077+15VLT - Air Release Vault (2000-03) C-107				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN081+09MNH - Pressure Manhole (2000-03) C-107				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN096+45MNH - Pressure Manhole (2000-03) C-108				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN101+93VLT - Air Release Vault (2000-03) C-109				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PN111+50VLT - Air Release Vault (2000-03) C-109				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	


Notes: Inflation is included at 3% per year.

 LAVWMA	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Export Pipeline															
Hydraulic Structures															
PN128+56VLT - Air Release Vault (2000-03) C-110	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN138+95MNH - Pressure Manhole (2000-03) C-11	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN150+02VLT - Air Release Vault (2000-03) C-112	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN159+41MNH - Pressure Manhole (2000-03) C-113	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN167+68VLT - Air Release Vault (2000-03) C-113	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN180+41MNH - Pressure Manhole (2000-03) C-114	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN191+59VLT - Air Release Vault (2000-03) C-115	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN194+91MNH - Pressure Manhole (2000-03) C-115	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN207+92VLT - Air Release Vault (2000-03) C-117	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN212+00MNH - Pressure Manhole (2000-03) C-117	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN219+50MNH - Pressure Manhole (2000-03) C-201	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN221+90VLT - Air Release Vault (2000-03) C-202	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN234+16VLT - Air Release Vault (2000-03) C-202	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN258+03VLT - Air Release Vault (2000-03) C-204	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN272+88VLT - Air Release Vault (2000-03) C-205	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN285+71MNH - Pressure Manhole (2000-03) C-207	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN319+14VLT - Air Release Vault (2000-03) C-210	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN335+70MNH - Pressure Manhole (2000-03) C-211	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN340+38VLT - Air Release Vault (2000-03) C-211	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN351+24MNH - Pressure Manhole (2000-03) C-212	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN352+64VLT - Expansion Joint Vault (2000-03) C-212	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN352+75BPC - Bridge Pipe Chase (2000-03) C-212/s-14	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN353+12BPC - Bridge Pipe Chase (2000-03) C-212/s-14	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN353+75BPC - Bridge Pipe Chase (2000-03) C-212/s-14	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN354+03BPC - Bridge Pipe Chase (2000-03) C-212/s-14	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN354+75BPC - Bridge Pipe Chase (2000-03) C-212/s-14	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0


Notes: Inflation is included at 3% per year.

 LAVWMA	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Export Pipeline															
Hydraulic Structures															
PN355+20BPC - Bridge Pipe Chase (2000-03) C-212/s-14	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN355+75BPC - Bridge Pipe Chase (2000-03) C-212/s-14	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN355+78VLT - Expansion Joint Vault (2000-03) C-213	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN367+42VLT - Air Release Vault (2000-03) C-214	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN374+74VLT - Air Release Vault (2000-03) C-214	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN391+75VLT - Air Release Vault (2000-03) C-216	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN398+00VLT - Air Release Vault (2000-02) C-301	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN413+00MNH - Pressure Manhole (2000-02) C-302	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN436+00MNH - Pressure Manhole (2000-02) C-304	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN446+00VLT - Air Release Vault (2000-02) C-305	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN470+00VLT - Air Release Vault (2000-02) C-307	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN489+00MNH - Pressure Manhole (2000-02) C-308	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN499+75VLT - Air Release Vault (2000-02) C-309	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN516+10MNH - Pressure Manhole (2000-02) C-310	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN531+00VLT - Air Release Vault (2000-02) C-311	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN545+65MNH - Pressure Manhole (2000-02) C-312	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN561+00VLT - Air Release Vault (2000-02) C-314	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN574+00MNH - Pressure Manhole (2000-02) C-315	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN585+81VLT - Air Release Vault (2000-02) C-316	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN586+77VLT - Air Release Vault (2000-02) C-316	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN599+16MNH - Pressure Manhole (2000-02) C-317	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN608+16MNH - Pressure Manhole (2000-02) C-317	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN623+61VLT - Air Release Vault (2000-02) C-318	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN637+20MNH - Pressure Manhole (2000-02) C-320	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN651+20MNH - Pressure Manhole (2000-02) C-321	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN664+20VLT - Air Release Vault (2000-02) C-322	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0

Notes: Inflation is included at 3% per year.

 <div>LAVWMA</div>	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Export Pipeline															
Hydraulic Structures															
PN679+01MNH - Pressure Manhole (2000-02) C-323	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN694+00MNH - Pressure Manhole (2000-02) C-324	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN701+84MNH - Pressure Manhole (2000-02) C-325	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN702+74VLT - Air Release Vault (2000-02) C-325	\$0	\$0	\$0	\$0	\$0	\$0	\$1,800	\$0	\$1,800	\$0	\$0	\$0	\$0	\$0	\$0
PN708+60MNH - Pressure Manhole (2000-02) C-325	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN721+45MNH - Pressure Manhole (2000-02) C-326	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN721+65VLT - Air Release Vault (2000-02) C-326	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN735+45MNH - Pressure Manhole (2000-02) C-327	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN746+95VLT - Air Release Vault (2000-02) C-329	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN750+10MNH - Pressure Manhole (2000-02) C-329	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN761+83MNH - Pressure Manhole (2000-02) C-330	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN771+90MNH - Pressure Manhole (2000-02) C-331	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN781+20MNH - Pressure Manhole (2000-02) C-331	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN791+60MNH - Pressure Manhole (2000-02) C-332	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN809+78MNH - Pressure Manhole (2000-02) C-334	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PN810+75VLT - Air Release Vault (2000-02/2003-01) C-334	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,900	\$0	\$1,900	\$0	\$0	\$0
PO010+08VLT - Plug Valve Vault 'a' (96-1) P-1	\$1,600	\$0	\$1,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PO012+40MNH - Pressure Manhole (2003-01) C-402	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
PO014+55VLT - Air Release Vault (21mgd-cont B)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PO014+85VLT - Air Release Vault (96-1/2000-02) C-305	\$1,600	\$0	\$1,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PO019+13VLT - Drain Vault Structure 1 (cal Trans Phase 2) P-3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PO024+65MNH - Pressure Manhole (96-1) P-2	\$1,600	\$0	\$1,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PO025+99VLT - Air Release Vault (2003-01) C-403	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
PO031+00VLT - Air Release Vault (21mgd-cont B) Pc-2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PO037+89VLT - Air Release Vault (2003-01) C-404	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
PO040+60VLT - Air Release Vault (96-1/2000-02) C-307	\$1,600	\$0	\$1,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Notes: Inflation is included at 3% per year.

	LAVWMA	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			Item No.	FYE 2027 - 2029		
		Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total		Rehab	Replace	Total
LAVWMA Export Pipeline																	
Hydraulic Structures																	
PO044+25VLT - Air Release Vault (21mgd-cont B) Pc-3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PO046+60MNH - Pressure Manhole (2003-01) C-404	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO048+58MNH - Pressure Manhole (96-1) P-4	\$1,600	\$0	\$1,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PO057+63VLT - Air Release Vault (21mgd-cont B) Pc-4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PO059+79VLT - Air Release Vault (96-1) P-5	\$1,600	\$0	\$1,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PO061+82VLT - Air Release Vault (2003-01) C-405	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO070+70VLT - Air Release Vault (vault B) (96-1) P-6	\$1,600	\$0	\$1,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PO076+30VLT - Air Release Vault (21mgd-cont B) Pc-5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PO076+39VLT - Air Release Vault (2003-01) C-406	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO087+50VLT - Air Release Vault (21mgd-cont B) Pc-6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
PO092+00MNH - Pressure Manhole (2003-01) C-408	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO100+17VLT - Air Release Vault (2003-01) C-408	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO116+50MNH - Pressure Manhole (2003-01) C-410	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO124+92VLT - Air Release Vault (2003-01) C-410	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO134+17VLT - Air Release Vault (2003-01) C-411	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO150+63MNH - Pressure Manhole (2003-01) C-412	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO159+82VLT - Air Release Vault (2003-01) C-413	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO164+65MNH - Pressure Manhole (2003-01) C-414	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO177+00MNH - Pressure Manhole (2003-01) C-415	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO198+08VLT - Air Release Vault (2003-01) C-416	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO208+60MNH - Pressure Manhole (2003-01) C-418	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO221+42VLT - Air Release Vault (2003-01) C-419	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
PO228+71MNH - Pressure Manhole (2003-01) C-420	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000	\$0	
Hydraulic Structures Subtotal:	\$11,200	\$0	\$11,200	\$0	\$0	\$0	\$3,600	\$0	\$3,600	\$66,500	\$0	\$66,500	\$38,000	\$0	\$38,000	\$0	
Number of Assets:	7	0	7	0	0	0	2	0	2	35	0	35	19	0	19	0	
Pump																	

Notes: Inflation is included at 3% per year.

	LAVWMA			FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			Item No. 12-B		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Export Pipeline																		
Pump																		
PN017+67PMP - Sump Pump (2000-03) C-102/c-218		\$0	\$5,300	\$5,300		\$0	\$0	\$0		\$900	\$0	\$900		\$0	\$0	\$0	\$0	\$0
PN017+84PMP - Sump Pump (2000-03) C-102		\$0	\$5,300	\$5,300		\$0	\$0	\$0		\$900	\$0	\$900		\$0	\$0	\$0	\$0	\$0
Pump Subtotal:		\$0	\$10,600	\$10,600		\$0	\$0	\$0		\$1,800	\$0	\$1,800		\$0	\$0	\$0	\$0	\$0
Number of Assets:		0	2	2		0	0	0		2	0	2		0	0	0	0	0
Valve																		
180753BFV - Pipeline 2 Meter Isolation Valve 2 (west)		\$0	\$9,900	\$9,900		\$0	\$0	\$0		\$600	\$0	\$600		\$0	\$0	\$0	\$0	\$0
180754BFV - Surge Tank 2 Valve		\$0	\$9,900	\$9,900		\$0	\$0	\$0		\$600	\$0	\$600		\$0	\$0	\$0	\$0	\$0
180755BFV - Valve 2 (west) For Meter Isolation Of Pipeline 1		\$0	\$7,400	\$7,400		\$0	\$0	\$0		\$400	\$0	\$400		\$0	\$0	\$0	\$0	\$0
180756BFV - Valve 2 (west), Surge Tank For Pipeline 1		\$0	\$4,200	\$4,200		\$0	\$0	\$0		\$200	\$0	\$200		\$0	\$0	\$0	\$0	\$0
180757BFV - Valve 1 (east), Surge Tank For Pipeline 1		\$0	\$4,200	\$4,200		\$0	\$0	\$0		\$200	\$0	\$200		\$0	\$0	\$0	\$0	\$0
180758BFV - Valve 1 (east) For Meter Isolation Of Pipeline 1		\$0	\$9,900	\$9,900		\$0	\$0	\$0		\$600	\$0	\$600		\$0	\$0	\$0	\$0	\$0
180759BFV - Valve 1 (east) For Meter Isolation Of Pipeline 2		\$0	\$9,900	\$9,900		\$0	\$0	\$0		\$600	\$0	\$600		\$0	\$0	\$0	\$0	\$0
80-1102BFV - Isolation Valve (2000-03) M-13		\$0	\$5,200	\$5,200		\$0	\$0	\$0		\$300	\$0	\$300		\$0	\$0	\$0	\$0	\$0
80-1102PRV - Pressure Relief Valve (2000-03) M-13		\$0	\$0	\$0		\$0	\$0	\$0		\$0	\$3,600	\$3,600		\$0	\$0	\$0	\$0	\$0
80-1103BFV - Isolation Valve (2000-03) M-13		\$0	\$5,200	\$5,200		\$0	\$0	\$0		\$300	\$0	\$300		\$0	\$0	\$0	\$0	\$0
80-1103PRV - Pressure Relief Valve (2000-03) M-13		\$0	\$0	\$0		\$0	\$0	\$0		\$0	\$3,600	\$3,600		\$0	\$0	\$0	\$0	\$0
PN000+00BFV - Butterfly Valve (2000-03) C-217/c-220		\$0	\$9,900	\$9,900		\$0	\$0	\$0		\$600	\$0	\$600		\$0	\$0	\$0	\$0	\$0
PN000+00CAV - Combination Air Valve (2000-03) C-217/c-220	\$200	\$0	\$200		\$200	\$0	\$200		\$0	\$0	\$0		\$200	\$0	\$200	\$200	\$0	\$200
PN011+82BFV - Butterfly Valve (2000-03) C-102		\$0	\$600	\$600		\$0	\$0	\$0		\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0
PN011+82CAV - Combination Air Vacuum Valve (2000-03) C-102	\$200	\$0	\$200		\$0	\$0	\$0		\$200	\$0	\$200		\$200	\$0	\$200	\$0	\$0	\$0
PN017+67BV - Ball Valve (2000-03) C-102/c-218		\$0	\$0	\$0		\$0	\$0	\$0		\$4,200	\$0	\$4,200		\$0	\$0	\$0	\$0	\$0
PN018+40BFV - Butterfly Valve (2000-03) C-102		\$0	\$600	\$600		\$0	\$0	\$0		\$0	\$0	\$0		\$0	\$0	\$0	\$0	\$0
PN018+40CAV - Combination Air Vacuum Valve (2000-03) C-102	\$200	\$0	\$200		\$200	\$0	\$200		\$0	\$0	\$0		\$200	\$0	\$200	\$200	\$0	\$200
PN025+00BFV - Butterfly Valve (2000-03) C-103		\$0	\$19,000	\$19,000		\$0	\$0	\$0		\$1,100	\$0	\$1,100		\$0	\$0	\$0	\$0	\$0
PN028+05BOV - Blow Off Valve (2000-03) C-103		\$0	\$0	\$0		\$0	\$0	\$0		\$0	\$3,600	\$3,600		\$0	\$0	\$0	\$0	\$0
PN041+89CAV - Combination Air Vacuum Valve (2000-03) C-104	\$200	\$0	\$200		\$200	\$0	\$200		\$0	\$0	\$0		\$200	\$0	\$200	\$200	\$0	\$200


Notes: Inflation is included at 3% per year.

 LAVWMA	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			Item No.	FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total		Rehab	Replace	Total
LAVWMA Export Pipeline																
Valve																
PN041+89GTV - Gate Valve (2000-03) C-104	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$800	\$800	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN043+79AVV - Air Vacuum Valve (ps C-14)	\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN043+79PGV - Plug Valve (ps C-14)	\$0	\$400	\$400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN077+15CAV - Combination Air Vacuum Valve (2000-03) C-107	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$0	\$200
PN077+15GTV - Gate Valve (2000-03) C-107	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$800	\$800	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN101+93BFV - Butterfly Valve (2000-03) C-109	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN101+93CAV - Combination Air Vacuum Valve (2000-03) C-109	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0
PN102+11BOV - Blow Off Valve (2000-03) C-109	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN111+50BFV - Butterfly Valve (2000-03) C-109	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN111+50CAV - Combination Air Vacuum Valve (2000-03) C-109	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$0	\$200
PN112+52BOV - Blow Off Valve (2000-03) C-109	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN128+56BFV - Butterfly Valve (2000-03) C-110	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN128+56CAV - Combination Air Vacuum Valve (2000-03) C-110	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$0	\$200
PN128+76BOV - Blow Off Valve (2000-03) C-110	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN150+02BFV - Butterfly Valve (2000-03) C-112	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN150+02CAV - Combination Air Vacuum Valve (2000-03) C-112	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$0	\$200
PN166+43BFV - Butterfly Valve (2000-03) C-113	\$0	\$19,000	\$19,000	\$0	\$0	\$0	\$1,100	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN167+68BFV - Butterfly Valve (2000-03) C-113	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN167+68CAV - Combination Air Vacuum Valve (2000-03) C-113	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$0	\$200
PN168+31BOV - Blow Off Valve (2000-03) C-114	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN191+59CAV - Combination Air Vacuum Valve (2000-03) C-115	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$0	\$200
PN191+59GTV - Gate Valve (2000-03) C-115	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$800	\$800	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN191+70BOV - Blow Off Valve (2000-03) C-115	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN207+92BFV - Butterfly Valve (2000-03) C-117	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN207+92CAV - Combination Air Vacuum Valve (2000-03) C-117	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$0	\$200
PN208+10BOV - Blow Off Valve (2000-03) C-117	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0


Notes: Inflation is included at 3% per year.

LAVWMA	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Export Pipeline															
Valve															
PN212+30BFV - Butterfly Valve (2000-03) C-117	\$0	\$19,000	\$19,000	\$0	\$0	\$0	\$1,100	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0
PN217+30BFV - Butterfly Valve (2000-03) C-201	\$0	\$19,000	\$19,000	\$0	\$0	\$0	\$1,100	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0
PN221+90BFV - Butterfly Valve (2000-03) C-202	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN221+90CAV - Combination Air Vacuum Valve (2000-03) C-202	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN229+17BOV - Blow Off Valve (2000-03) C-202	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0
PN234+16CAV - Combination Air Vacuum Valve (2000-03) C-202	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN234+16GTV - Gate Valve (2000-03) C-202	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$4,000	\$0	\$0	\$0	\$0	\$0	\$0
PN258+03BFV - Butterfly Valve (2000-03) C-204	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN258+03CAV - Combination Air Vacuum Valve (2000-03) C-204	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN271+10BOV - Blow Off Valve (2000-03) C-205	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0
PN272+88BFV - Butterfly Valve (2000-03) C-205	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN272+88CAV - Combination Air Vacuum Valve (2000-03) C-205	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN285+71BOV - Blow Off Valve (2000-03) C-207	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0
PN319+14BFV - Butterfly Valve (2000-03) C-210	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN319+14CAV - Combination Air Vacuum Valve (2000-03) C-210	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0
PN340+38CAV - Combination Air Vacuum Valve (2000-03) C-211	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN340+38GTV - Gate Valve (2000-03) C-211	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$4,000	\$0	\$0	\$0	\$0	\$0	\$0
PN350+70BOV - Blow Off Valve (2000-03) C-212	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0
PN351+30BOV - Blow Off Valve (2000-03) C-212	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0
PN351+91BFV - Butterfly Valve (2000-03) C-212/s-14	\$0	\$9,900	\$9,900	\$0	\$0	\$0	\$600	\$0	\$600	\$0	\$0	\$0	\$0	\$0	\$0
PN351+98BFV - Butterfly Valve (2000-03) C-212/s-14	\$0	\$9,900	\$9,900	\$0	\$0	\$0	\$600	\$0	\$600	\$0	\$0	\$0	\$0	\$0	\$0
PN356+36BFV - Butterfly Valve (2000-03) C-213/s-14	\$0	\$9,900	\$9,900	\$0	\$0	\$0	\$600	\$0	\$600	\$0	\$0	\$0	\$0	\$0	\$0
PN357+00BFV - Butterfly Valve (2000-03) C-213/s-14	\$0	\$9,900	\$9,900	\$0	\$0	\$0	\$600	\$0	\$600	\$0	\$0	\$0	\$0	\$0	\$0
PN367+42BFV - Butterfly Valve (2000-03) C-214	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN367+42CAV - Combination Air Vacuum Valve (2000-03) C-214	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN374+74BFV - Butterfly Valve (2000-03) C-214	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0


Notes: Inflation is included at 3% per year.

<div>  <div>LAVWMA</div> </div>	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Export Pipeline															
Valve															
PN374+74CAV - Combination Air Vacuum Valve (2000-03) C-214	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN391+75CAV - Combination Air Vacuum Valve (2000-03) C-216	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN391+75GTV - Gate Valve (2000-03) C-216	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$800	\$800	\$0	\$0	\$0	\$0	\$0	\$0
PN398+00BFVA - Butterfly Valve 1 (2000-02) C-301	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PN398+00BFVB - Butterfly Valve 2 (2000-02) C-301	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PN398+00BFVC - Butterfly Valve 3 (2000-02) C-301	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PN398+00CAVA - Combination Air Vacuum Valve 1 (2000-02) C-301	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN398+00CAVB - Combination Air Vacuum Valve 2 (2000-02) C-301	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0
PN398+00CAVC - Combination Air Vacuum Valve 3 (2000-02) C-301	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0
PN419+33BFV - Butterfly Valve (2000-02) C-303	\$0	\$19,000	\$19,000	\$0	\$0	\$0	\$1,100	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0
PN419+38BFV - Butterfly Valve (2000-02) C-303	\$0	\$19,000	\$19,000	\$0	\$0	\$0	\$1,100	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0
PN440+45BOV - Blow Off Valve (2000-02) C-304	\$0	\$0	\$0	\$0	\$3,400	\$3,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN446+00BFV - Butterfly Valve (2000-02) C-305	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PN446+00CAV - Combination Air Vacuum Valve (2000-02) C-305	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN453+05BOV - Blow Off Valve (2000-02) C-305	\$0	\$0	\$0	\$0	\$3,400	\$3,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN470+00BFV - Butterfly Valve (2000-02) C-307	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN470+00CAV - Combination Air Vacuum Valve (2000-02) C-307	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN477+95BOV - Blow Off Valve (2000-02) C-307	\$0	\$0	\$0	\$0	\$3,400	\$3,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN477+95GTV - Gate Valve (2000-02) C-307	\$0	\$0	\$0	\$0	\$3,700	\$3,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN499+75BFV - Butterfly Valve (2000-02) C-309	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN499+75CAV - Combination Air Vacuum Valve (2000-02) C-309	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN500+70BFV - Butterfly Valve (2000-02) C-309	\$0	\$19,000	\$19,000	\$0	\$0	\$0	\$1,100	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0
PN500+80BFV - Butterfly Valve (2000-02) C-309	\$0	\$19,000	\$19,000	\$0	\$0	\$0	\$1,100	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0
PN531+00BFV - Butterfly Valve (2000-02) C-311	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN531+00CAV - Combination Air Vacuum Valve (2000-02) C-311	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN561+00BFV - Butterfly Valve (2000-02) C-314	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Notes: Inflation is included at 3% per year.

<div>  <div>LAVWMA</div> </div>	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Export Pipeline															
Valve															
PN561+00CAV - Combination Air Vacuum Valve (2000-02) C-314	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN585+81BFV - Butterfly Valve (2000-02) C-316	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN585+81CAV - Combination Air Vacuum Valve (2000-02) C-316	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN586+49BFV - Butterfly Valve (2000-02) C-316	\$0	\$19,000	\$19,000	\$0	\$0	\$0	\$1,100	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0
PN586+50BFV - Butterfly Valve (2000-02) C-316	\$0	\$9,900	\$9,900	\$0	\$0	\$0	\$600	\$0	\$600	\$0	\$0	\$0	\$0	\$0	\$0
PN586+72BFV - Butterfly Valve (2000-02) C-316	\$0	\$19,000	\$19,000	\$0	\$0	\$0	\$1,100	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0
PN586+77BFV - Butterfly Valve (2000-02) C-316	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN586+77CAV - Combination Air Vacuum Valve (2000-02) C-316	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN623+61BFVA - Butterfly Valve 1 (2000-02) C-318	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PN623+61BFVB - Butterfly Valve 2 (2000-02) C-318	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PN623+61BFVC - Butterfly Valve 3 (2000-02) C-318	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PN623+61CAVA - Combination Air Vacuum Valve 1 (2000-02) C-318	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN623+61CAVB - Combination Air Vacuum Valve 2 (2000-02) C-318	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0
PN623+61CAVC - Combination Air Vacuum Valve 3 (2000-02) C-318	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0
PN664+20BFV - Butterfly Valve (2000-02) C-322	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN664+20CAV - Combination Air Vacuum Valve (2000-02) C-322	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN701+84BOV - Blow Off Valve (2000-02) C-325	\$0	\$0	\$0	\$0	\$3,700	\$3,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN702+74BFV - Butterfly Valve (2000-02) C-325	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN702+74CAV - Combination Air Vacuum Valve (2000-02) C-325	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN721+45BOV - Blow-off Valve (2000-02) C-326	\$0	\$0	\$0	\$0	\$3,700	\$3,700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN721+65BFV - Butterfly Valve (2000-02) C-326	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN721+65CAV - Combination Air Vacuum Valve (2000-02) C-326	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN746+95BFV - Butterfly Valve (2000-02) C-329	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PN746+95CAV - Combination Air Vacuum Valve (2000-02) C-329	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200
PN809+78BOV - Blow-off Valve (2000-02) C-334	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PN810+75BFV - Butterfly Valve (2000-02/2003-01) C-334	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Notes: Inflation is included at 3% per year.

	LAVWMA	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			Item No. 12-B	FYE 2027 - 2029		
		Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total		Rehab	Replace	Total
LAVWMA Export Pipeline																	
Valve																	
PN810+75CAV - Combination Air Vacuum Valve (2000-02) C-334	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0		
PO010+08PGV - Plug Valve (96-1) P-1	\$0	\$1,400	\$1,400	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0		
PO014+55BFV - Butterfly Valve (21mgd-cont B)	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0		
PO014+55CAV - Combination Air Vacuum Valve (21mgd-cont B) Pc-1	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200		
PO014+85CAV - Combination Air Vacuum Valve (96-1/2000-02) C-305	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200		
PO014+85PGV - Plug Valve (96-1/2000-02) C-305	\$0	\$1,400	\$1,400	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0		
PO019+13GTV - Drain Valve (cal Trans Phase 2) P-3	\$0	\$700	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
PO024+90PGV - Plug Valve (96-1) P-2	\$0	\$1,400	\$1,400	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0		
PO025+99BFV - Butterfly Valve (2003-01) C-403	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
PO025+99CAV - Combination Air Vacuum Valve (2003-01) C-403	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200		
PO031+00BFV - Butterfly Valve (21mgd-cont B) Pc-2	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0		
PO031+00CAV - Combination Air Vacuum Valve (21mgd-cont B) Pc-2	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200		
PO037+89BFV - Butterfly Valve (2003-01) C-404	\$0	\$3,300	\$3,300	\$0	\$0	\$0	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0		
PO037+89CAV - Combination Air Vacuum Valve (2003-01) C-404	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200		
PO040+60CAV - Combination Air Vacuum Valve (96-1/2000-02) C-307	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200		
PO040+60PGV - Plug Valve (96-1/2000-02) C-307	\$0	\$1,900	\$1,900	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0		
PO044+25BFV - Butterfly Valve (21mgd-cont B) Pc-3	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0		
PO044+25CAV - Combination Air Vacuum Valve (21mgd-cont B) Pc-3	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200		
PO048+58DRV - Drain Valve (96-1) P-4	\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
PO057+63BFV - Butterfly Valve (21mgd-cont B) Pc-4	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0		
PO057+63CAV - Combination Air Vacuum Valve (21mgd-cont B) Pc-4	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200		
PO059+79BFV - Butterfly Valve (96-1) P-5	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0		
PO059+79CAV - Combination Air Vacuum Valve (96-1) P-5	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200		
PO061+82BFV - Butterfly Valve (2003-01) C-405	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0		
PO061+82CAV - Combination Air Vacuum Valve (2003-01) C-405	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200		
PO070+70BFV - Butterfly Valve Vault B (96-1) P-6	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0		

Notes: Inflation is included at 3% per year.


LAVWMA Export Pipeline

Valve															
PO070+70CAV - Combination Air Vacuum Valve (96-1) P-6	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200
PO076+30BFV - Butterfly Valve (21mgd-cont B) Pc-5	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PO076+30CAV - Combination Air Vacuum Valve (21mgd-cont B) Pc-5	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200
PO076+39BFV - Butterfly Valve (2003-01) C-406	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PO076+39CAV - Combination Air Vacuum Valve (2003-01) C-406	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200
PO087+50BFV - Butterfly Valve (21mgd-cont B) Pc-6	\$0	\$1,700	\$1,700	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PO087+50CAV - Combination Air Vacuum Valve (21mgd-cont B) Pc-6	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200
PO100+17CAV - Combination Air Vacuum Valve (2003-01) C-408	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200
PO100+77BFV - Butterfly Valve (2003-01) C-408	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PO124+92BFV - Butterfly Valve (2003-01) C-410	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
PO124+92CAV - Combination Air Vacuum Valve (2003-01) C-410	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200
PO134+17BFV - Butterfly Valve (2003-01) C-411	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PO134+17CAV - Combination Air Vacuum Valve (2003-01) C-411	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200
PO159+00BFV - Butterfly Valve (2003-01) C-413	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PO159+82CAV - Combination Air Vacuum Valve (2003-01) C-413	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200
PO193+08BFV - Butterfly Valve (2003-01) C-416	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PO193+08CAV - Combination Air Vacuum Valve (2003-01) C-416	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200
PO221+42BFV - Butterfly Valve (2003-01) C-419	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
PO221+42CAV - Combination Air Vacuum Valve (2003-01) C-419	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0
Valve Subtotal:	\$7,800	\$381,100	\$388,900	\$10,000	\$21,300	\$31,300	\$31,000	\$61,600	\$92,600	\$7,800	\$0	\$7,800	\$10,000	\$0	\$10,000
Number of Assets:	39	84	123	50	6	56	111	20	131	39	0	39	50	0	50
LAVWMA Export Pipeline Subtotal:	\$19,100	\$391,900	\$411,000	\$10,300	\$21,300	\$31,600	\$36,700	\$61,600	\$98,300	\$74,400	\$0	\$74,400	\$48,000	\$120,400	\$168,400
Number of Assets:	47	87	134	53	6	59	118	20	138	75	0	75	69	3	72

LAVWMA Junction Structure

Hydraulic Structures														
180303TNK - Calcium Thiosulfate Storage Tank	\$0	\$14,100	\$14,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Notes: Inflation is included at 3% per year.

 <div>LAVWMA</div>	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Junction Structure															
Hydraulic Structures															
Hydraulic Structures Subtotal:	\$0	\$14,100	\$14,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Pump															
180514P - Calcium Thiosulfate Pump 1	\$0	\$300	\$300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180515P - Calcium Thiosulfate Pump 2 (spare)	\$0	\$300	\$300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180516P - Junction Structure Sump Pump	\$0	\$0	\$0	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$600	\$600
180517P - Dsrds Effluent Line Chlorine & Ph Sample Pump	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$500	\$500	\$0	\$0	\$0
180518P - Combined Influent Chlorine Sample Pump	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$500	\$500	\$0	\$0	\$0
180519P - Livermore Line Chlorine & Ph Sample Pump	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$500	\$500	\$0	\$0	\$0
180520P - Emergency Discharge Chlorine & Ph Sample Pump	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$800	\$800	\$0	\$0	\$0
Pump Subtotal:	\$400	\$600	\$1,000	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$2,300	\$2,300	\$0	\$600	\$600
Number of Assets:	4	2	6	0	0	0	1	0	1	0	4	4	0	1	1
Valve															
180721BFV - Livermore Line Valve 1	\$0	\$7,400	\$7,400	\$0	\$0	\$0	\$400	\$0	\$400	\$0	\$0	\$0	\$0	\$0	\$0
180722BFV - Livermore Line Valve 2	\$0	\$7,400	\$7,400	\$0	\$0	\$0	\$400	\$0	\$400	\$0	\$0	\$0	\$0	\$0	\$0
180723BFV - Dsrds Effluent Line Valve 1	\$0	\$19,000	\$19,000	\$0	\$0	\$0	\$1,100	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0
180724BFV - Dsrds Effluent Line Valve 2	\$0	\$19,000	\$19,000	\$0	\$0	\$0	\$1,100	\$0	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0
Valve Subtotal:	\$0	\$52,800	\$52,800	\$0	\$0	\$0	\$3,000	\$0	\$3,000	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:	0	4	4	0	0	0	4	0	4	0	0	0	0	0	0
LAVWMA Junction Structure Subtotal:	\$400	\$67,500	\$67,900	\$0	\$0	\$0	\$3,100	\$0	\$3,100	\$0	\$2,300	\$2,300	\$0	\$600	\$600
Number of Assets:	4	7	11	0	0	0	5	0	5	0	4	4	0	1	1
LAVWMA Livermore Pipeline															
Electrical Equipment															
L001+00RTF - Rectifier L-1 (2000-01) C-11	\$0	\$200	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
L070+00RTF - Rectifier L-2 (lavwma Export System) L1-3	\$0	\$200	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Notes: Inflation is included at 3% per year.

LAVWMA Livermore Pipeline

Electrical Equipment														
L146+00RTF - Rectifier L-3 (lavwma Export System) L1-6	\$0	\$200	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
L235+00RTF - Rectifier L-4 (lavwma Export System) L1-9	\$0	\$200	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
L331+95RTF - Rectifier L-5 (lavwma Export System) L1-12	\$0	\$200	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Electrical Equipment Subtotal:	\$0	\$1,000	\$1,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:	0	5	5	0	0	0	0	0	0	0	0	0	0	0

Hydraulic Structures														
L026+80MNH - Pressure Manhole L-2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L046+23MNH - Pressure Manhole L-3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L056+80VLT - Air Release Vault L-4	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L067+16VLT - Air Release Vault L-5	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L076+00VLT - Air Release Vault L-6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L082+00MNH - Pressure Manhole L-6a	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L091+00VLT - Air Release Vault L-7	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L100+00VLT - Air Release Vault L-8	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L109+00VLT - Air Release Vault L-8b	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L119+00VLT - Air Release Vault L-9	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L130+50VLT - Air Release Vault L-10	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L133+54MNH - Pressure Manhole L-10b	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L164+60VLT - Air Release Vault L-6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L229+00VLT - Air Release Vault L-17a	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L232+28VLT - Air Release Vault L-9	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L276+90VLT - Air Release Vault L-21b	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L285+90VLT - Air Release Vault L-11	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L287+57MNH - Pressure Manhole L-12	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L317+00MNH - Pressure Manhole L-11	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000
L332+75VLT - Air Release Vault L1-12	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,000	\$0	\$2,000

Notes: Inflation is included at 3% per year.

	LAVWMA			FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			Item No. 12.B		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Livermore Pipeline																		
Hydraulic Structures																		
Hydraulic Structures Subtotal:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$40,000	\$0	\$40,000			
Number of Assets:	0	0	0	0	0	0	0	0	0	0	0	0	20	0	20			
Valve																		
L015+75CAV - Combination Air Vacuum Valve	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0
L025+00GTV - Valve For Draining L-2	\$0	\$3,500	\$3,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
L056+80CAV - Combination Air Vacuum Valve L-4	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0
L067+16CAV - Combination Air Vacuum Valve L-5	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0
L091+00AVV - Air Vacuum Valve L-7	\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
L091+00CAV - Combination Air Vacuum Valve L-7	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0
L100+00CAV - Combination Air Valve L-8	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$0	\$200	\$0	\$200
L109+00CAV - Combination Air Vacuum Valve L-8b	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$0	\$200	\$0	\$200
L119+00CAV - Combination Air Vacuum Valve L-9	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0
L130+50CAV - Combination Air Valve L-10a	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0
L164+60CAV - Valve, Air Release Vault L-6	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$4,000	\$4,000
L229+00CAV - Combination Air Valve L-17a	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0
L232+28CAV - Valve, Air Release Vault L-9	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0
L276+90CAV - Combination Air Vacuum Valve L-21b	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0
L285+90CAV - Combination Air Vacuum Valve L-11	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0
L332+75BFV - Valve, Air Release Vault L1-12	\$0	\$600	\$600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
L332+75CAV - Valve, Air Release Vault L1-12	\$200	\$0	\$200	\$0	\$0	\$0	\$200	\$0	\$200	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$4,000	\$4,000
Valve Subtotal:	\$2,400	\$7,300	\$9,700	\$400	\$0	\$400	\$2,800	\$0	\$2,800	\$2,400	\$0	\$2,400	\$400	\$8,000	\$8,400			
Number of Assets:	12	3	15	2	0	2	15	0	15	12	0	12	2	2	4			
LAVWMA Livermore Pipeline Subtotal:	\$2,400	\$8,300	\$10,700	\$400	\$0	\$400	\$2,800	\$0	\$2,800	\$2,400	\$0	\$2,400	\$40,400	\$8,000	\$48,400			
Number of Assets:	12	8	20	2	0	2	15	0	15	12	0	12	22	2	24			
LAVWMA Pump Station																		

Notes: Inflation is included at 3% per year.


LAVWMA Pump Station

Heating, Ventilation, and Air Conditioning (HVAC)														
180100FAN - Exhaust Fan For Women's Room Ef-5	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180101FAN - Exhaust Fan For Men's Room Ef-7	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180102FAN - Exhaust Fan For Lab Ef-6	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180103FAN - Exhaust Fan For Water Heater Room Ef-8	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180110FAN - Exhaust Fan For Roof Top South Ef-1	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180111FAN - Exhaust Fan For Roof Top North Ef-4	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Heating, Ventilation, and Air Conditioning (HVAC) Subtotal:	\$0	\$6,600	\$6,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:	0	6	6	0	0	0	0	0	0	0	0	0	0	0

Lifting Equipment														
180901HST - Winch 1	\$0	\$1,800	\$1,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180902HST - Winch 2	\$0	\$1,800	\$1,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180903HST - Winch 3	\$0	\$1,800	\$1,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180904HST - Winch 4	\$0	\$1,800	\$1,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
LAV0067 - Crane For Lavwma Shop	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Lifting Equipment Subtotal:	\$0	\$7,200	\$7,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:	0	4	4	0	0	0	0	0	0	0	0	0	0	0

Pump														
180501P - Secondary Effluent Discharge Pump 1	\$0	\$0	\$0	\$21,100	\$0	\$21,100	\$0	\$0	\$0	\$0	\$95,000	\$95,000	\$0	\$0
180502P - Secondary Effluent Discharge Pump 2	\$0	\$0	\$0	\$21,100	\$0	\$21,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,800
180503P - Secondary Effluent Discharge Pump 3	\$0	\$0	\$0	\$0	\$0	\$0	\$22,400	\$0	\$22,400	\$0	\$0	\$0	\$0	\$0
180504P - Secondary Effluent Discharge Pump 4	\$0	\$0	\$0	\$21,100	\$0	\$21,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,800
180505P - Secondary Effluent Discharge Pump 5	\$0	\$79,600	\$79,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180506P - Secondary Effluent Discharge Pump 6	\$0	\$79,600	\$79,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180507P - Secondary Effluent Discharge Pump 7	\$0	\$0	\$0	\$21,100	\$0	\$21,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,800
180508P - Secondary Effluent Discharge Pump 8	\$0	\$79,600	\$79,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180509P - Secondary Effluent Discharge Pump 9	\$0	\$0	\$0	\$21,100	\$0	\$21,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$100,800

Notes: Inflation is included at 3% per year.

<div>  <div>LAVWMA</div> </div>			FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
			Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Pump Station																	
Pump																	
180510P - Secondary Effluent Discharge Pump 10			\$0	\$79,600	\$79,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180651P - Pump For Dewatering, Basin 1 For Secondary Effluen			\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$5,000	\$5,000	\$0	\$0	\$0	\$0	\$0	\$0
180652P - Pump For Dewatering, Basin 2 For Secondary Effluen			\$0	\$4,500	\$4,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180653P - Pump For Dewatering, Basin 3 For Secondary Effluen			\$0	\$4,500	\$4,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180675P - Pump For Wash Down System			\$0	\$27,100	\$27,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pump Subtotal:			\$700	\$354,500	\$355,200	\$105,500	\$0	\$105,500	\$22,400	\$5,000	\$27,400	\$0	\$95,000	\$95,000	\$0	\$403,200	\$403,200
Number of Assets:			1	7	8	5	0	5	1	1	2	0	1	1	0	4	4
Valve																	
180501ARV - Valve 3, Pump 1 For Secondary Effluent			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180502ARV - Valve 3, Pump 2 For Secondary Effluent			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180503ARV - Valve 3, Pump 3 For Secondary Effluent			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180504ARV - Valve 3, Pump 4 For Secondary Effluent			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180505ARV - Valve 3, Pump 5 For Secondary Effluent			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180506ARV - Valve 3, Pump 6 For Secondary Effluent			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180507ARV - Valve 3, Pump 7 For Secondary Effluent			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180508ARV - Valve 3, Pump 8 For Secondary Effluent			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180509ARV - Valve 3, Pump 9 For Secondary Effluent			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180510ARV - Valve 3, Pump 10 For Secondary Effluent			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180675ABFV - Valve To Basin 1, Pump For Wash Down System			\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
180675APRV - Valve For Discharge, Pump For Wash Down System			\$0	\$0	\$0	\$0	\$3,400	\$3,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180675ARV - Valve, Pump For Wash Down System			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180675BBFV - Valve To Basin 2, Pump For Wash Down System			\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
180675BPRV - Valve For By-pass, Pump For Wash Down System			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180675CBFV - Valve To Basin 3, Pump For Wash Down System			\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0
180675CV - Valve To Basin 1, Pump For Wash Down System			\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180675DBFV - Valve From Back-up 1, Pump For Wash Down System			\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0	\$0

Notes: Inflation is included at 3% per year.

LAVWMA Pump Station

Valve														
180675EBFV - Valve From Back-up 2, Pump For Wash Down System	\$0	\$1,100	\$1,100	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0
180675V - Valve For Discharge Shut-off, Pump For Wash Down	\$0	\$1,400	\$1,400	\$0	\$0	\$0	\$100	\$0	\$100	\$0	\$0	\$0	\$0	\$0
180730CV - Secondary Effluent Pump 1 Valve 1	\$0	\$0	\$0	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
180731GV - Secondary Effluent Pump 1 Valve 2	\$0	\$0	\$0	\$0	\$13,900	\$13,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180732CV - Secondary Effluent Pump 2 Valve 1	\$0	\$0	\$0	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180733GV - Secondary Effluent Pump 2 Valve 2	\$0	\$0	\$0	\$0	\$13,900	\$13,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180734CV - Secondary Effluent Pump 3 Valve 1	\$0	\$0	\$0	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
180735GV - Secondary Effluent Pump 3 Valve 2	\$0	\$0	\$0	\$0	\$13,900	\$13,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180736CV - Secondary Effluent Pump 4 Valve 1	\$0	\$0	\$0	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
180737GV - Secondary Effluent Pump 4 Valve 2	\$0	\$0	\$0	\$0	\$13,900	\$13,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180738CV - Secondary Effluent Pump 5 Valve 1	\$0	\$0	\$0	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
180739GV - Secondary Effluent Pump 5 Valve 2	\$0	\$0	\$0	\$0	\$13,900	\$13,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180740CV - Secondary Effluent Pump 6 Valve 1	\$0	\$0	\$0	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
180741GV - Secondary Effluent Pump 6 Valve 2	\$0	\$0	\$0	\$0	\$13,900	\$13,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180742CV - Secondary Effluent Pump 7 Valve 1	\$0	\$0	\$0	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
180743GV - Secondary Effluent Pump 7 Valve 2	\$0	\$0	\$0	\$0	\$13,900	\$13,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180744CV - Secondary Effluent Pump 8 Valve 1	\$0	\$0	\$0	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180745GV - Secondary Effluent Pump 8 Valve 2	\$0	\$0	\$0	\$0	\$13,900	\$13,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180746CV - Secondary Effluent Pump 9 Valve 1	\$0	\$0	\$0	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
180747GV - Secondary Effluent Pump 9 Valve 2	\$0	\$0	\$0	\$0	\$13,900	\$13,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180748CV - Secondary Effluent Pump 10 Valve 1	\$0	\$0	\$0	\$200	\$0	\$200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000
180749GV - Secondary Effluent Pump 10 Valve 2	\$0	\$0	\$0	\$0	\$13,900	\$13,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180750BFV - Pipeline 1 Drainage Valve	\$0	\$6,300	\$6,300	\$0	\$0	\$0	\$400	\$0	\$400	\$0	\$0	\$0	\$0	\$0
180751BFV - Pipeline 2 Drainage Valve	\$0	\$6,300	\$6,300	\$0	\$0	\$0	\$400	\$0	\$400	\$0	\$0	\$0	\$0	\$0
180752BFV - Discharge Piping Valve	\$0	\$9,900	\$9,900	\$0	\$0	\$0	\$600	\$0	\$600	\$0	\$0	\$0	\$0	\$0

Notes: Inflation is included at 3% per year.


LAVWMA Pump Station

Valve																
	Valve Subtotal:	\$0	\$71,000	\$71,000	\$2,000	\$142,400	\$144,400	\$2,000	\$0	\$2,000	\$0	\$0	\$0	\$0	\$32,000	\$32,000
	Number of Assets:	0	22	22	10	11	21	9	0	9	0	0	0	0	8	8
	LAVWMA Pump Station Subtotal:	\$700	\$439,300	\$440,000	\$107,500	\$142,400	\$249,900	\$24,400	\$5,000	\$29,400	\$0	\$95,000	\$95,000	\$0	\$435,200	\$435,200
	Number of Assets:	1	39	40	15	11	26	10	1	11	0	1	1	0	12	12

LAVWMA Sample Station

Pump															
180521P - Sample Pump	\$0	\$0	\$0	\$0	\$0	\$0	\$300	\$0	\$300	\$0	\$0	\$0	\$0	\$1,900	\$1,900
180522P - Dechlor Sample Pump	\$0	\$1,500	\$1,500	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
80-1002P - Pump 2 For Calcium Thiosulfate (2000-03) M-12	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
80-1003P - Pump 1 For Calcium Thiosulfate (2000-03) M-12	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Pump Subtotal:	\$0	\$1,500	\$1,500	\$0	\$0	\$0	\$300	\$0	\$300	\$0	\$0	\$0	\$0	\$1,900	\$1,900
Number of Assets:	2	1	3	2	0	2	3	0	3	2	0	2	0	3	3
LAVWMA Sample Station Subtotal:	\$0	\$1,500	\$1,500	\$0	\$0	\$0	\$300	\$0	\$300	\$0	\$0	\$0	\$0	\$1,900	\$1,900
Number of Assets:	2	1	3	2	0	2	3	0	3	2	0	2	0	3	3
Total:	\$22,600	\$909,600	\$932,200	\$118,400	\$163,700	\$282,100	\$67,600	\$66,600	\$134,200	\$76,800	\$97,300	\$174,100	\$88,600	\$566,100	\$654,700
Number of Assets:	66	143	209	73	17	90	153	21	174	89	5	94	92	21	113

Notes: Inflation is included at 3% per year.

	LAVWMA			FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
				Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total

LAVWMA Export Pipeline

Electrical Equipment																		
180201MCN - Starter, Motor For Air Compressor 1				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180202MCN - Starter, Motor For Air Compressor 2				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Electrical Equipment Subtotal:				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Motor																		
180201M - Motor, Air Compressor 1				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180202M - Motor, Air Compressor 2				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Motor Subtotal:				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LAVWMA Export Pipeline Subtotal:				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0


LAVWMA Junction Structure

Actuator/Positioner																		
180621ACT - Actuator, Sluice Gate For By-pass Of Secondary Eff				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180622ACT - Main Secondary Effluent Sluice Gate Actuator				\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180623ACT - Emergency Discharge Sluice Gate Actuator				\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Actuator/Positioner Subtotal:				\$0	\$12,800	\$12,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:				0	2	2	0	0	0	0	0	0	0	0	0	0	0	0


Electrical Equipment																		
180516MCN - Starter For Motor, Pump For Junction Structure Sum				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Electrical Equipment Subtotal:				\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Motor


Notes: Inflation is included at 3% per year.

<div>  <div>LAVWMA</div> </div>	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Junction Structure															
Motor															
180517M - Motor, Pump For Chlorine & Ph Sample Of Dsrds Effl	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180519M - Motor, Pump For Chlorine & Ph Sample Of Livermore	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Motor Subtotal:	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LAVWMA Junction Structure Subtotal:	\$0	\$12,800	\$12,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0
LAVWMA Pump Station															
Actuator/Positioner															
180601ACT - Actuator, Sluice Gate For Basin 1 Exit	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180602ACT - Actuator, Sluice Gate For Basin 2 Exit	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180603ACT - Actuator, Sluice Gate For Basin 3 Exit	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180611ACT - Actuator, Slide Gate For Basin 1 Inlet	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180612ACT - Actuator, Sluice Gate For Basin 2 Inlet	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180613ACT - Basin 3 Inlet Slide Gate Actuator	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180631ACT - Basin 1 Effluent Sluice Gate Actuator	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180632ACT - Basin 2 Effluent Sluice Gate Actuator	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180633ACT - Actuator, Sluice Gate For Basin 3 Effluent	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180634ACT - Actuator, Sluice Gate 1 For Secondary Effluent	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180635ACT - Actuator, Sluice Gate 2 For Secondary Effluent Dis	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180636ACT - Actuator, Sluice Gate 3 For Secondary Effluent Dis	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180637ACT - Actuator, Sluice Gate 4 For Secondary Effluent Dis	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180638ACT - Actuator, Sluice Gate 5 For Secondary Effluent Dis	\$0	\$6,400	\$6,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Actuator/Positioner Subtotal:	\$0	\$76,800	\$76,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Number of Assets:	0	12	12	0	0	0	0	0	0	0	0	0	0	0	0
Electrical Equipment															


Notes: Inflation is included at 3% per year.

 LAVWMA	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			Item No.	FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total		Rehab	Replace	Total
LAVWMA Pump Station																
Electrical Equipment																
1804901BRKA - Main Circuit Breaker 1	\$0	\$21,000	\$21,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901BRKB - Main Circuit Breaker 2	\$0	\$21,000	\$21,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901BRKC - Feeder P106 Current Breaker	\$0	\$21,000	\$21,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901BRKD - Generator Circuit Breaker	\$0	\$21,000	\$21,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901BRKE - Feeder P108 Circuit Breaker	\$0	\$21,000	\$21,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901BRKF - Feeder P107 Circuit Breaker	\$0	\$21,000	\$21,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901BRKG - Bus Tie Circuit Breaker	\$0	\$21,000	\$21,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901CMDA - Iq Analyzer For Main Breaker 1	\$0	\$3,400	\$3,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901CMDB - Iq Analyzer For Main Breaker 2	\$0	\$3,400	\$3,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901CMDC - Iq Dp 4000 For Feeder P106 Circuit Breaker	\$0	\$3,400	\$3,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901CMDD - Iq Dp 4000 For Generator Circuit Breaker	\$0	\$3,400	\$3,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901CMDE - Iq Dp 4000 For Feeder P108 Circuit Breaker	\$0	\$3,400	\$3,400	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901CMDF - Iq Analyzer For Feeder P107 Circuit Breaker	\$0	\$0	\$0	\$0	\$3,600	\$3,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901MCCA - Motor Control Panel P1	\$0	\$5,300	\$5,300	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901MCCB - Motor Control Panel P2	\$0	\$0	\$0	\$3,900	\$0	\$3,900	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,700	\$6,700
1804901-MDS - Main Distribution Switchgear Assembly	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$95,000	\$95,000	\$0	\$0	\$0	\$0
1804901PRCA - Protection Relay For Main Breaker 1	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901PRCB - Protection Relay For Main Breaker 2	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901PRCC - Protection Relay For Feeder P106 Breaker	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901PRCD - Protection Relay For Generator Circuit Breaker	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901PRCE - Protection Relay For Feeder P108 Breaker	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901PRCF - Protection Relay For Feeder P107 Breaker	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901TFRA - Control Power Transformer 1, Main Distribution	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901TFRB - Control Power Transformer 2, Main Distribution	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901VTSA - Transformer For Line 1 Voltage	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901VTSB - Transformer For Line 2 Voltage	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0


Notes: Inflation is included at 3% per year.

<div>  <div>LAVWMA</div> </div>	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Pump Station															
Electrical Equipment															
1804901VTSD - Transformer For Generator Voltage	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804901VTSG - Transformer For Bus Tie Voltage	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804903-PNL - Panel A For Lighting And Outlet Circuit Breaker	\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804903TFR - Transformer For Panel A	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$47,800	\$47,800	\$0	\$0	\$0	\$0	\$0	\$0
1804904-PNL - Panel E For Emergency Lighting And Outlets	\$0	\$3,200	\$3,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804904TFR - Transformer For Panel E	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$47,800	\$47,800	\$0	\$0	\$0	\$0	\$0	\$0
1804905-PNL - Panel E2 For Emergency Lighting And Outlets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$4,000
1804905TFR - Transformer For Panel E2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804906-PNL - Panel L	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$4,000
1804906TFR - Transformer For Panel L	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804907MCC - Motor Control Center B	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,700	\$0	\$6,700
1804910-LDP - Distribution Panel R	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,000	\$4,000
1804911-LDP - Distribution Panel P	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1804912-LDP - Distribution Panel Pe	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180501MPR - Protection Relay, Motor For Pump 1 Of Secondary Ef	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180501MSS - Starter, Motor For Pump 1 Of Secondary Effluent Di	\$0	\$4,200	\$4,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180502MPR - Protection Relay, Motor For Pump 2 Of Secondary Ef	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180502MSS - Starter, Motor For Pump 2 Of Secondary Effluent Di	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180503MPR - Protection Relay, Motor For Pump 3 Of Secondary Ef	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180503MSS - Starter, Motor For Pump 3 Of Secondary Effluent Di	\$0	\$4,200	\$4,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180504MPR - Protection Relay, Motor For Pump 4 Of Secondary Ef	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180504MSS - Starter, Motor For Pump 4 Of Secondary Effluent Di	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180505MPR - Protection Relay, Motor For Pump 5 Of Secondary Ef	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180505MSS - Starter, Motor For Pump 5 Of Secondary Effluent Di	\$0	\$4,200	\$4,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180506MPR - Protection Relay, Motor For Pump 6 Of Secondary Ef	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180506MSS - Starter, Motor For Pump 6 Of Secondary Effluent Di	\$0	\$4,200	\$4,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Notes: Inflation is included at 3% per year.

<div>  <div>LAVWMA</div> </div>	FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Pump Station															
Electrical Equipment															
180507MPR - Protection Relay, Motor For Pump 7 Of Secondary Ef	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180507MSS - Starter, Motor For Pump 7 Of Secondary Effluent Di	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180508MPR - Protection Relay, Motor For Pump 8 Of Secondary Ef	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180508MSS - Starter, Motor For Pump 8 Of Secondary Effluent Di	\$0	\$4,200	\$4,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180509MPR - Protection Relay, Motor For Pump 9 Of Secondary Ef	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180509MSS - Starter, Motor For Pump 9 Of Secondary Effluent Di	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180510MPR - Protection Relay, Motor For Pump 10 Of Secondary E	\$0	\$0	\$0	\$700	\$0	\$700	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180510MSS - Starter, Motor For Pump 10 Of Secondary Effluent D	\$0	\$4,200	\$4,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180511MCN - Starter For Motor, Pump 1 For Secondary Effluent D	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180651MCN - Starter For Motor, Pump For Dewatering Of Basin 1	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180652MCN - Starter For Motor, Pump For Dewatering Of Basin 2	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180653MCN - Starter For Motor, Pump For Dewatering Of Basin 3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180675MCN - Starter, Motor For Pump Of Wash Down System	\$0	\$4,200	\$4,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Electrical Equipment Subtotal:	\$0	\$205,100	\$205,100	\$15,100	\$3,600	\$18,700	\$0	\$95,600	\$95,600	\$0	\$95,000	\$95,000	\$6,700	\$18,700	\$25,400
Number of Assets:	0	22	22	17	1	18	0	2	2	0	1	1	1	4	5
Motor															
180501M - Secondary Effluent Discharge Pump 1 Motor	\$0	\$106,100	\$106,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180502M - Secondary Effluent Discharge Pump 2 Motor	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$161,300	\$161,300
180503M - Secondary Effluent Discharge Pump 3 Motor	\$0	\$106,100	\$106,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180504M - Secondary Effluent Discharge Pump 4 Motor	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$161,300	\$161,300
180505M - Secondary Effluent Discharge Pump 5 Motor	\$0	\$106,100	\$106,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180506M - Secondary Effluent Discharge Pump 6 Motor	\$0	\$106,100	\$106,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180507M - Secondary Effluent Discharge Pump 7 Motor	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$161,300	\$161,300
180508M - Secondary Effluent Discharge Pump 8 Motor	\$0	\$106,100	\$106,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
180509M - Secondary Effluent Discharge Pump 9 Motor	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$161,300	\$161,300
180510M - Secondary Effluent Discharge Pump 10 Motor	\$0	\$106,100	\$106,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Notes: Inflation is included at 3% per year.

 LAVWMA			FYE 2020 - 2021			FYE 2021 - 2023			FYE 2023 - 2025			FYE 2025 - 2027			FYE 2027 - 2029		
			Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total	Rehab	Replace	Total
LAVWMA Pump Station																	
Motor																	
180675M - Motor, Pump For Wash Down System			\$0	\$21,200	\$21,200	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Motor Subtotal:			\$0	\$657,800	\$657,800	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$645,200	\$645,200
Number of Assets:			0	7	7	0	0	0	0	0	0	0	0	0	0	4	4
LAVWMA Pump Station Subtotal:			\$0	\$939,700	\$939,700	\$15,100	\$3,600	\$18,700	\$0	\$95,600	\$95,600	\$0	\$95,000	\$95,000	\$6,700	\$663,900	\$670,600
Number of Assets:			0	41	41	17	1	18	0	2	2	0	1	1	1	8	9
Total:			\$0	\$952,500	\$952,500	\$15,100	\$3,600	\$18,700	\$0	\$95,600	\$95,600	\$0	\$95,000	\$95,000	\$6,700	\$663,900	\$670,600
Number of Assets:			0	43	43	17	1	18	0	2	2	0	1	1	1	8	9

Notes: Inflation is included at 3% per year.

2nd Nutrient Watershed Permit Summary

Agenda

- ▶ Background
 - Why are we concerned with nutrients in SF Bay?
 - First Watershed Permit

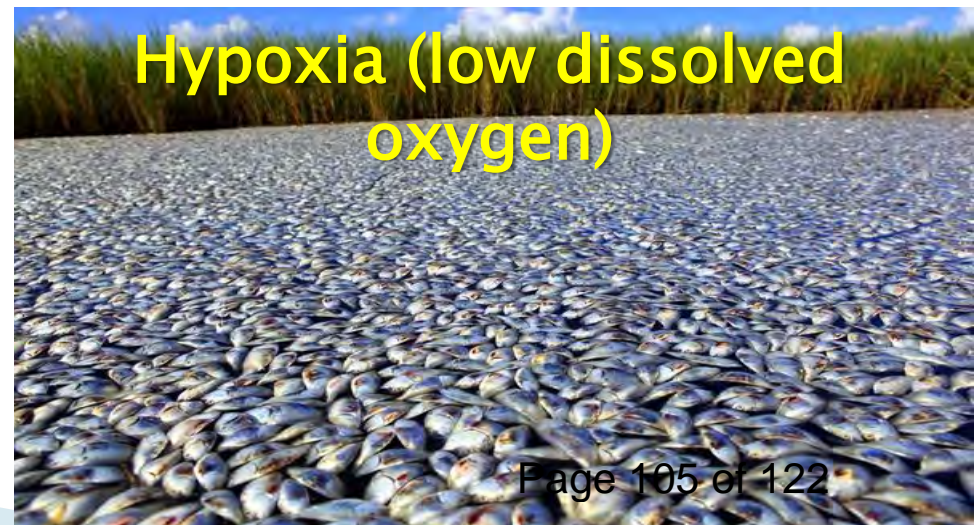
- ▶ Second Watershed Permit
 - Key Elements
 - Schedule

Why the concern about nutrients?

- ▶ Potential environmental impacts of nitrogen and phosphorus



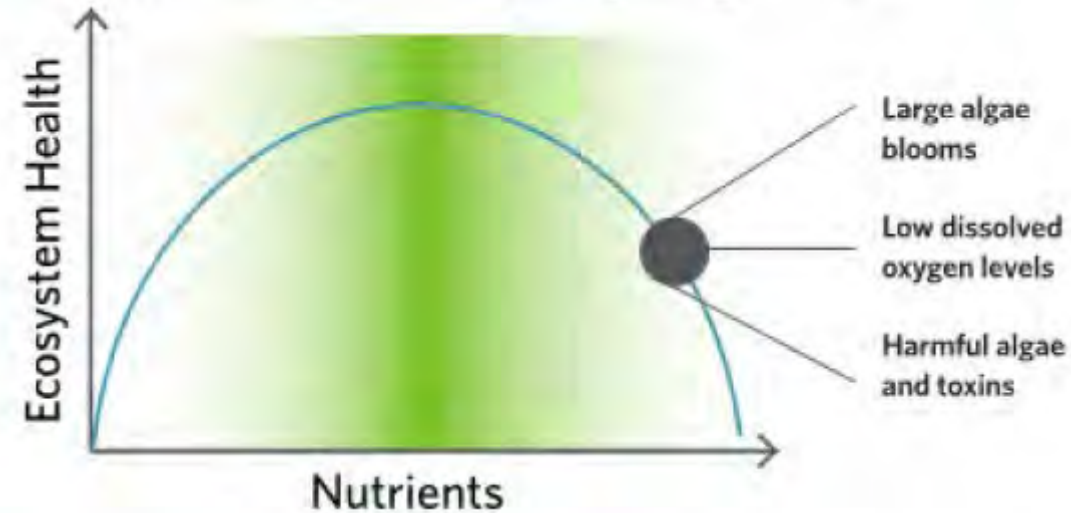
Altered Species Composition



Background

SF Bay looks OK – is it?

Nitrogen and Phosphorus Loads to the Bay

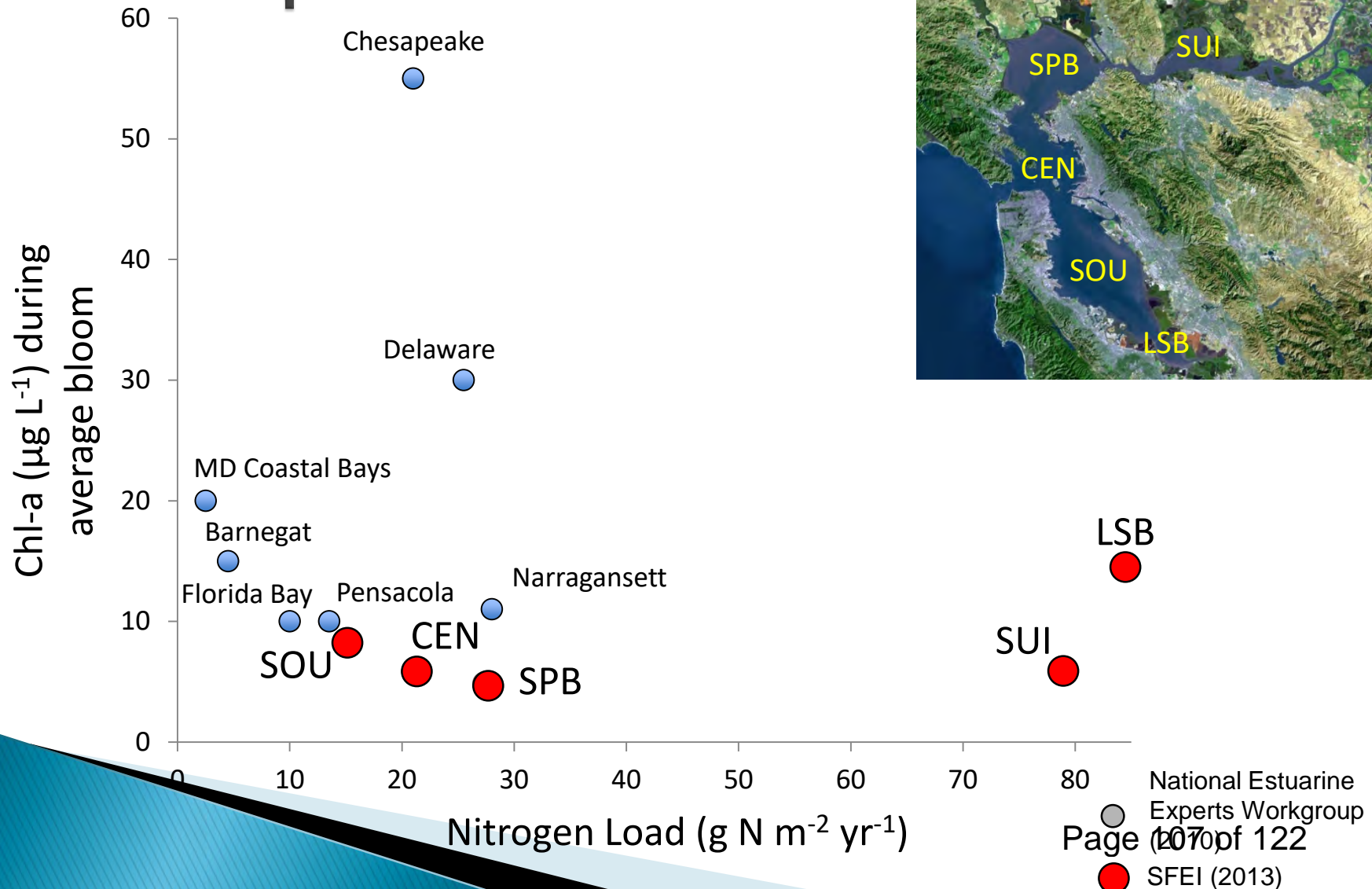


- Largest CA estuary
- Population = 7.6 M
- 37 WWTPs
- Drains 40% of CA
- Nitrogen and Phosphorus
 - Large loads
 - High concentrations

Background

Item No. 12.D

High direct Nitrogen loads, but low impacts



Why has San Francisco Bay been resilient to nutrients?

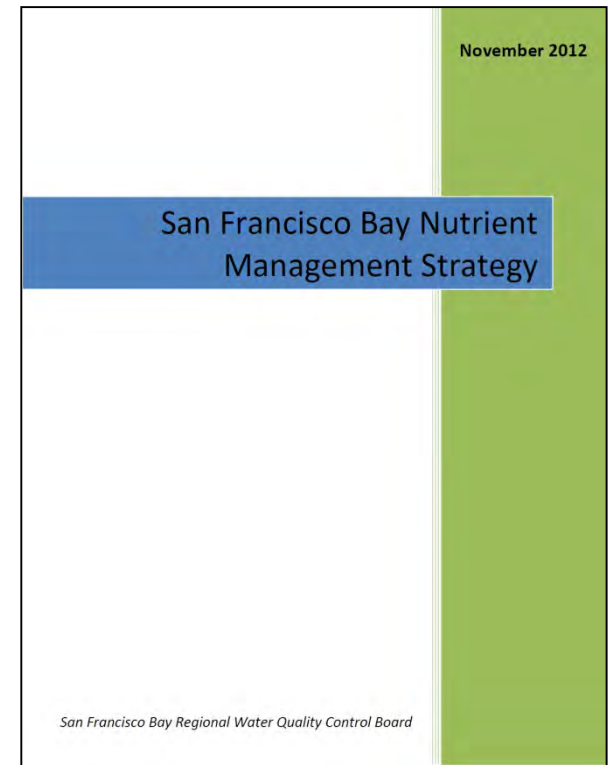
1. High turbidity blocks the light phytoplankton needs to grow
2. Strong tidal mixing reduces nutrient concentrations
3. Filter-feeding clams reduces phytoplankton concentrations

BUT

There has been a recent reduction in turbidity due to sediment capture by upstream dams, and clam populations are on the decline.

What do we do in the face of uncertainty?

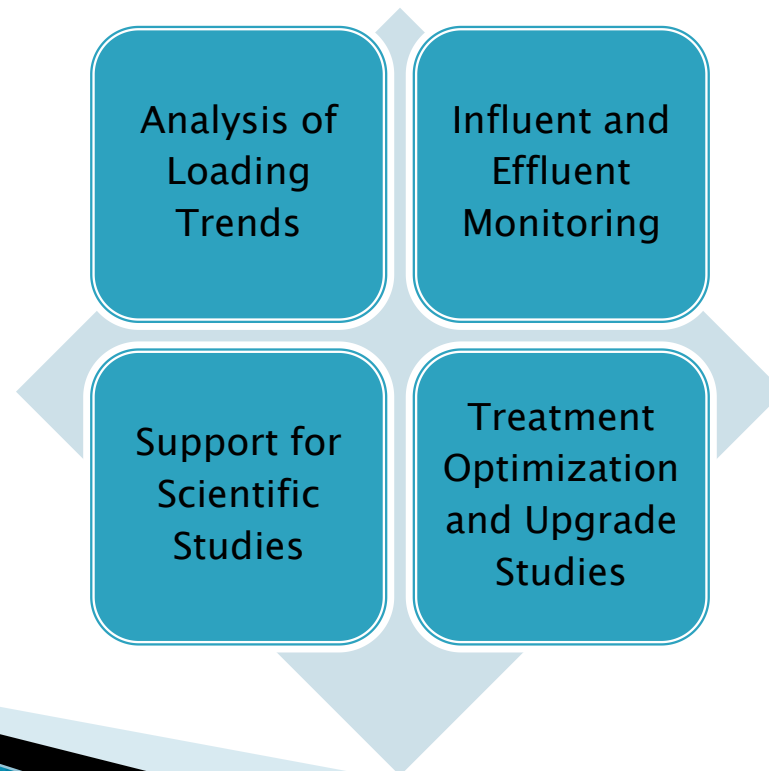
- ▶ Collaborate with regulators to ward off reactionary limits
- ▶ Fund scientific research to better understand any potential problems for the Bay and their causes
- ▶ Plan for incremental reductions in nutrient loads



Background

First Watershed Permit

- ▶ In the spirit of collaboration, the Bay Area Clean Water Agencies (BACWA), representing the Bay's 37 wastewater treatment plants, and the Regional Water Board negotiated a watershed permit in 2014

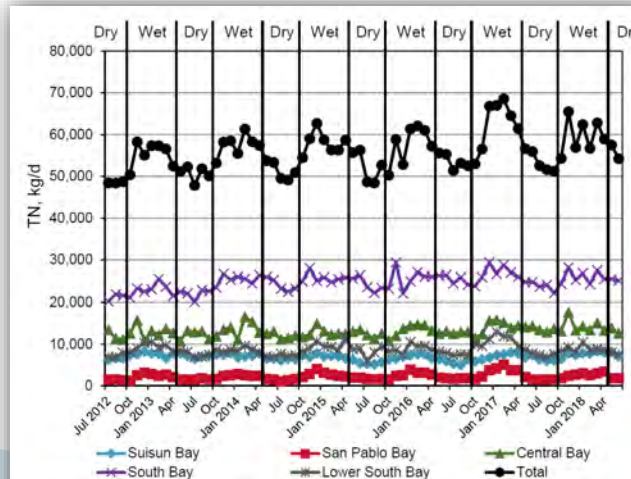


Second Watershed Permit

- ▶ Over the past several years, BACWA and the Water Board have been negotiating a new Watershed Permit that will be in effect from 2019–2024.
- ▶ The following key tenets were agreed to:
 1. Individual treatment plant nutrient monitoring and reporting;
 2. Group Annual Reporting of nutrient loads to the Bay;
 3. Funding for Nutrient Management Strategy's scientific investigations;
 4. A regional assessment of the feasibility and cost for reducing nutrients through means other than treatment and discharge at POTWs;
 5. Establishing a baseline for POTWs that undertake early actions to reduce nutrients; and
 6. Funding for Monitoring and Modeling at the end of the second Nutrient Watershed Permit

Second Watershed Permit Monitoring and Reporting

- ▶ *New* Influent monitoring for plants >10 MGD
 - Quarterly
- ▶ Effluent monitoring twice per month (EBDA Outfall)
 - No longer includes TKN or Ortho-P which are more difficult tests
- ▶ Continued Group Annual Reporting through BACWA



Second Watershed Permit Science Funding

- ▶ \$2.2M per year (up from \$880k) to San Francisco Estuary Institute
 - EBDA contribution is \$277k
- ▶ Key questions:
 - What constitutes impairment? Which areas are impaired?
 - Does the Bay's trajectory signal future impairment?
 - Are nutrient load reductions are needed? where? how much?
 - How much time is needed for science, planning, and implementation?



Second Watershed Permit Regional Study

- ▶ Study will evaluate non-traditional, multi-benefit approaches to reducing nutrients
 - Includes wetlands and horizontal levees
 - Complements Nutrient Reduction Study under first Watershed Permit which looked at traditional treatment approaches
 - Plan is to integrate with ongoing sea level rise resilience work by San Francisco Estuary Institute
 - A regional summary of nitrogen reductions associated with water recycling will also be developed



Second Watershed Permit 2024 Load Targets

- ▶ Current permit does not have effluent limits, but it does include targets for likely limits in 2024 permit
 - Target is for EBDA, not individual plants
 - Based on 2014–2018 performance plus buffer to account for growth and variability
 - EBDA's target assumes loads currently going to Hayward Marsh are returned to EBDA
- ▶ Provides a basis for planning nutrient reductions
- ▶ Opportunity to readjust in 2024 if significant changes occur, e.g. loss of recycled water customers or increase in trucked organic waste

Second Watershed Permit 2024 Load Targets

- ▶ EBDA Baseline: 8100–8600 kg/day inorganic N
- ▶ EBDA Target: 9400–9800 kg/day inorganic N
 - Ranges represent continuing discussion regarding calculation methodology

Agency	2017–18 Dry Season Average TIN (kg/day)*	Relative Contribution
City of Hayward	1241	16%
City of San Leandro	641	8%
Oro Loma Sanitary District	1712	23%
Union Sanitary District	3391	45%
Dublin San Ramon Services District	100	1%
City of Livermore	521	7%
Total	7605	

*For comparison purposes only.
Does not include Hayward Marsh.

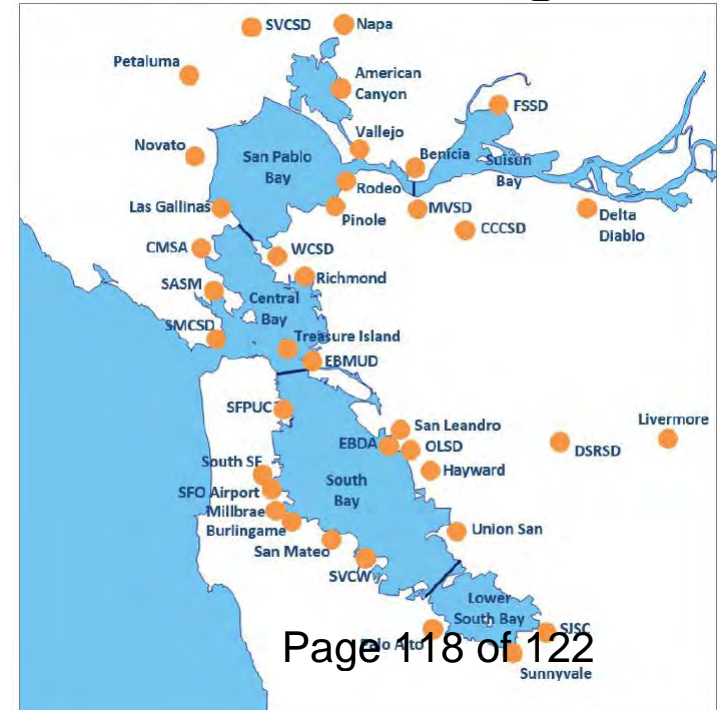
Second Watershed Permit Early Action

- ▶ Plants implementing projects that will result in significant nitrogen reductions during this permit cycle are listed in permit as “Early Actors”
 - Includes Oro Loma and Hayward
 - Plants that aren’t listed but achieve significant reductions will receive same consideration
- ▶ If further reductions are required,
 - Early Actors will be moved to the back of the line
 - Others will be considered for Compliance Schedules, which can be up to 10 years
 - *Demonstrating robust planning for nutrient reductions will be key to obtaining reasonable compliance schedules*



Second Watershed Permit Compliance and Trading

- ▶ Compliance anticipated to be measured on a subembayment basis
 - If subembayment exceeds limit, enforcement is on individual discharger that exceeds their target
 - EBDA Plants not expected to have individual targets for compliance purposes
- ▶ Water Board open to considering a trading scheme in future permits



Second Watershed Permit Permit Schedule

- ▶ Administrative Drafts (AD) provided January 2 and 31, 2019
- ▶ Tentative Order scheduled for March 2019
- ▶ Public comments received and responses made in April 2019
- ▶ Public hearing May 8, 2019
- ▶ Adoption June 12, 2019
- ▶ Effective July 1, 2019 – June 30, 2024

Questions?

February 1-14, 2019 Flows

WWTP											LAVWMA			
Date February	Rain	Pleasanton Flows				Dublin Flows			WWTP Influent Peak Flow	WWTP Influent Pumps Daily Total	Calculated DSRSD INFL M-002F2 MGD	Meter LIVERMORE INFLUENT MGD	LAWVMA Export Pumping MG	LAWVMA Export Peak Pumping MG
		P'town Flume	HIGHL. OAKS	EAST AMADOR	Total Pleasanton	CAMP PARKS	WEST DUBLN	Total Dublin						
	Inches	MGD	MGD	MGD	MGD	MG	MG	MG	MG	MG	MG	MG	MG	MG
2/1/2019	0.14	3.65	0.55	1.91	6.10	2.89	2.29	5.17	19.79	13.64	12.10	4.48	16.58	24.49
2/2/2019	0.47	4.45	0.63	2.11	7.19	2.98	2.29	5.27	22.48	11.71	12.44	4.39	16.83	29.35
2/3/2019	0.14	4.86	0.68	4.41	9.95	2.98	2.29	5.26	24.15	10.14	10.70	5.60	16.30	28.86
2/4/2019	0.88	6.20	0.77	3.36	10.32	3.31	2.29	5.60	28.53	15.66	16.22	4.63	20.84	29.39
2/5/2019	0.17	5.59	0.72	3.16	9.48	3.22	2.29	5.51	24.54	13.45	13.77	5.88	19.65	24.09
2/6/2019	0.00	4.50	0.69	3.16	8.36	2.89	2.29	5.18	21.94	12.54	17.78	5.55	23.32	24.59
2/7/2019	0.00	4.10	0.70	2.15	6.94	2.77	2.29	5.06	22.58	13.33	17.96	5.18	23.14	25.31
2/8/2019	0.34	4.16	0.69	2.14	6.98	2.73	2.09	4.82	23.30	14.16	14.70	4.71	19.41	25.38
2/9/2019	0.33	4.55	0.69	2.19	7.43	2.93	2.09	5.02	24.32	10.23	15.01	5.14	20.15	25.30
2/10/2019	0.29	6.02	0.74	2.36	9.11	3.34	2.09	5.43	39.10	13.85	14.07	5.08	19.15	25.24
2/11/2019	0.00	4.78	0.71	2.36	7.85	2.94	2.09	5.03	25.52	11.61	13.37	5.04	18.41	25.68
2/12/2019	0.18	4.45	0.70	2.24	7.39	2.97	1.97	4.94	24.47	11.01	18.78	5.04	23.82	26.20
2/13/2019	1.35	7.31	0.81	2.93	11.06	3.56	2.20	5.76	55.53	22.79	14.44	5.04	19.48	33.86
2/14/2019	0.76	7.51	0.85	3.10	11.46	3.73	1.71	5.44	40.40	21.96	14.80	7.51	22.31	33.58

*** Feb 8-11 West Dublin flow average calculated due to Alamo radio transmitter failed

Rain historical data from:

https://www.wunderground.com/history/monthly/us/ca/pleasanton/KLVK/date/2019-2?cm_ven=localwx_history

LAVWMA Action Item List

Month: January 2019

SAG Task	Responsible Party	Due Date	Status	Completion Date
Items for February 20, 2019 LAVWMA Board Meeting	SAG	2/10/2019	Usual reports, DSRSD receiving flow from CCCSD for recycled water use, draft FY19/20 budget (to be approved in May), Nutrient Watershed Permit update	
Operations Coordination Committee Task	Responsible Party	Due Date	Status	Completion Date
FYE 2019 Replacement Projects: See Items Below	Delight/Lopez	Various dates	Refer to information below.	
1. Purchase of Three New 500 HP Export Pumps - estimated cost \$222,000 less liquidated damages.	Delight/Weir	9/30/2017	All three pumps operating successfully as of October 31, 2018. Settlement agreement and mutual waiver agreed to by MuniQuip. Key elements include: 1) One-year warranty period began November 14, 2018; 2) Both parties signed a release to resolve all past performance issues pertaining to the Agreement with finality for both parties; and 3) Total compensation included a penalty of \$50,000 resulting in a final payment of \$177,115.33. Invoice to be paid upon receipt.	11/14/2018
2. Rebuild Three Pumps - estimated cost of \$60,000 each, total \$180,000	Quinlan	6/30/2019	The three pumps that have been replaced can be repaired at any time since ten pumps are in service and wet weather is no longer an issue for repairing the pumps.	
3. Snorkels and Flow Meters at Junction Structure - estimated cost, two snorkels at \$25,000 each plus three flow meters at \$25,000 each. Total is \$125,000	Portugal/Lopez	6/30/2019	Snorkels were part of original design but not installed. This will improve flow measurement by keeping air out of the system along with standardizing the existing meters which are having problems and need replacing. A consultant will be hired to assist with this project.	
4. Resealing of all three Storage Basins - estimated cost \$200,000	Quinlan	TBA	The basins need to be resealed approximately every ten years. Rebar is showing in some areas. A survey is being conducted to determine if the basins are settling. That study will be completed by October 2019. At that time the basins will be resealed unless there are settling issues.	
5. New SCADA System for San Leandro Sample Station (SLSS) - estimated cost \$95,000	Atendido	4/30/2019	Project is underway. WME is the contractor. Submittals are being received. Completion is expected in April 2019.	
Other Items				
Triennial Review of Electrical System	Atendido	6/30/2019	Eaton Electric Services tested all systems and everything was normal. The spare breaker was cycled into service. The water pump on the generator failed and is being replaced.	10/31/2018
Wet Weather Issues	Fuller	10/31/2018	Meeting held November 1, 2018.	
Live test of SLSS system	Fuller/Atendido	TBD	Should be scheduled after replacement of SCADA system	
Wet Well Isolation Gates	Quinlan	6/30/2019	Gate is in good shape but won't fully close. No date set, perhaps this winter.	
EBDA Enterococcus Issue	Fuller		No issues at this time.	
YTD O&M Expenses compared to budget	Carson, Weir	Ongoing	Reviewed at every Operations Coordination Meeting.	